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CENTRAL ASIA DEVELOPMENT GROUP, JO # 45 ALTERNATIVE LIVELIHOOD QUICK IMPACT PROGRAM FINAL REPORT

Report for RAMP-CLIN 0004-JO# 45-CADG

RAMP/CADG

JUNE 2006

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RAMP PROJECT

ALQIP Final Report
Kandahar and Helmand Provinces
Afghanistan




Rebuilding Agriculture Markets in Southern Afghanistan

Prepared by:

Central Asia development group

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1. Introduction to the ALQIP Program:

a. Identification of the ALQIP program:

Afghanistan still remains the world's largest heroin supplier. A huge portion of the Afghan economy is fueled by the production of poppies, and many farmers have come to rely on this crop. Great measures have been taken in order to rid Afghanistan of poppy production. Poppy fields are being eradicated by the government of Afghanistan supported by the US and British military. Despite the government's best efforts farmers continue to grow poppy in order to make enough income for themselves and their families. Through the Alternative Livelihood Quick Impact Program (ALQIP) we have shown farmers alternative means to generating an income by presenting farmers with new crops and improved varieties.

Job Order Number: 45-0004-CADG – Central Asia Development Group (CADG)

- Contract Approval Date: 8 December 2004
- Actual Start Date: 1 January 2005
- Contract Completion Date: 30 September 2005

Implementing Agency and Contact:

- Central Asia Development Group (CADG)
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(CLIN: CLIN0004: Agricultural Technology and Market Development)

Reporting Period: 1 January 2005 to 30 September 2005

Total Project Budget: **US $2,149,110**

b. Primary Goals for the ALQIP Program:

Through the Alternative Lively Hood Quick Impact Program (ALQIP) we hope to accomplish the following tasks;

- Educate farmers in agricultural practices,
- Establish demonstration plots for best practices,
- Conduct Drip irrigation training and supervise drip irrigation uses,
- Improved variety distribution.

c. What were the Procedures used to Complete these Goals:

Training in agricultural practices:

Through the ALQIP program CADG has helped local farmers improve their knowledge in agriculture and in marketing. We have improved farmer's NET income by presenting farmers with new varieties. Extension workers have been trained and sent out all over the Helmand (13 districts) and Kandahar (5 districts) region to find farmers interested in trying out new types of crops and teaching these farmer's best practices. CADG has sent at least one extension worker to each of the districts in Helmand and Kandahar. However due to lack of security we are unable to send extension workers to certain districts.

Demonstration plots for best practices:

A total of 262 demonstration plots have been setup, which has introduced the Afghan farmers to a wide range of different types of crops and seed varieties. Through these demonstrations farmers can improve their own crop productions by following the examples of local farmers who have been selected and trained by our CADG staff in best practices.

In order to establish the most profitable crops, best practices are used to manipulate the environment. Light, heat, water, air, nutrients, and pest control are all resources for which we developed best practices to ensure the crop reaches its full potential. Crops are planted at specific distances apart from one another and on certain parts of the farm that the crop can get the optimal amount of heat and light. CADG encourages the use of plastic tunnels to protect crops from frost damage and increase the amount of heat that the crops get when planted inside the plastic tunnel. Weeding and drip irrigation is needed to ensure that the soil has enough air inside it for the roots to prosper and to ensure that the crops are getting the optimal amount of water. Fertilizer use ensures that crops are getting all 16 macro and micro nutrients that they need to fully produce the maximum amount of yield. CADG continues to do research on the severity of the pest problem in Afghanistan, and educate farmers on best methods to deal with the pest problem.

Improved drip irrigation:

The main focus of the Alqip program has been on the installation of drip irrigation systems. Of the 262 plots, 188 plots have had drip irrigation installed. In order to ensure the success of these irrigation systems CADG has setup field training in Thailand to educate the extension workers in drip

irrigation. The extension workers have established field days and have visited farmers individually to educate farmers.

The advantages of installing a drip irrigation system is that a farmer can effectively place a precise amount of water in the exact areas the plant wants it. This cuts back on weeding that the farmer needs to do and also on the amount of water that is being used. It also allows air to travel inside the soil giving roots adequate oxygen. In the end it will result in larger incomes that farmers produce from their crops. The disadvantages are that if drip irrigation systems are not properly used then crops can become flooded or too dry resulting in lower yields or even complete failure of the crop, which is why it becomes essential that farmers be properly trained in order to ensure the success of these drip irrigation systems.

Improved variety and distribution:

Seeds that are distributed to the farmers are first tested in CADG research farms located in both the Helmand and Kandahar region. Different seed varieties are tested to identify the amount of yield and quality of yield that can be expected from this crop. With more varieties being introduced to the farmers, farmers are able to produce quality crops that can compete on the world market.

CADG staff members have gone out to neighboring countries to see what varieties of crops were in high demand. Under other USAID sponsored programs CADG have sent traders to Singapore, Europe, and Asia to develop marketing contracts.

2. Training Programs:

a. Extension workers trained in Thailand:

On the 19th of February 2005, thirty of CADG's extension workers have been sent to a 45 day drip irrigation training program at Doi Tung, a mountainous area in northern Thailand. The area is famous for its high value products such as coffee, handicrafts, and macadamia nuts. Due to the large yields of these crops and the high demand these crops have been able to diminish the opium industry in Thailand. The training course has been planned by the company Netafim, one of the world leaders in drip

irrigation. The overall goal of this course is to familiarize the extension workers with advanced irrigation techniques.

In 2004 under the RAMP program, CADG installed over 20 systems across Kandahar and Helmand to confirm that the drip irrigations systems would work in Afghan conditions. After seeing the effects of the drip irrigation system and the openness of local farmers to try out this new system, more drip systems have been established under Alqip. To ensure the success of this program CADG have continuously updated the training of the extension workers.

The Doi Tung training began with a basic introduction to agronomy and soil science, the inter-relationships between environmental factors plants, and the importance of water and its movement through soil and plants. Different systems have been compared and their appropriateness to certain crops and climatic conditions.

The advantages of drip irrigation have been discussed, and several lectures were given over to practical workshops during which the extension workers were familiarized with all aspects of the drip systems such as the pumps, valves, drip pipes, filters, and technical diagrams. Extension workers are given hands on experience in technical aspects of the drip irrigation system.

Each extension worker has been tested on the design and installation of the drip irrigation system. All extension workers have passed this examination and have been awarded certificates for their achievements.

As part of the program Netafim stationed an Agronomist and 2 Irrigation Specialists to further enhance the training and expertise of the Afghan Extension staff. These 3 persons where based in Helmand and Kandahar for 6 months and provided stability and were able to entrench the Thailand training. They were able to address the many practical issues which were not covered in the theoretical training the extension workers received in Thailand.

3. Results of the ALQIP Demonstration Plots:

a. Corn Report:

Introduction:

After all the corn cobs have been stripped of the husks by hand they are placed on the ground where they are dried. After drying they are threshed by machine and the corn is bagged and put into storage areas before being moved to local markets and sold. The husks, cobs and stalks from the corn are also dried and used to feed

the farmer's livestock or as fuel in Afghan stoves and ovens. Properly dried corn remains fresh for a longer period of time.

Many farmers have chosen to grow corn this year due to its high versatility. Farmers can use all the different parts of the corn increasing the corn's value as a crop. Corn is a summer time crop and produces the highest yields when the temperatures ranging from 18 to 29 C. Some factors may extend the growing season such as irrigation and Nitrogen and DAP fertilizers. This year the flowering stage was characterized by exceptionally high temperatures in late August, which partly explains why yields are generally lower than the previous season.

Plot Description:

90 different plots of corn have been planted under the ALQIP program, 89 of these plots have been placed under drip irrigation. 17 plots have been planted in north Helmand, 65 plots in south Helmand, and 8 plots in Kandahar. Four different varieties of corn have been grown this season in order to test the effectiveness of the four different varieties. In addition, 7 different varieties of corn have been tested in Bolan Farm to determine expected yields for these crops and optimal sowing and harvesting dates. The results of these tests show that the optimal sowing date for corn is between late June to early July and the optimal harvesting date was in late October to early November. The synthetic corn variety has produced a yield of 9,728 kg per hectare, and local Sarhad Yellow has produced a yield of 4,682 kg per hectare. The selling price of corn ranges from $0.10 to $0.18 depending on the time the farmer has harvested his corn and the district. The corn has been planted during the months of June and July so that the flowering stage for corn escapes the high temperatures that occur in the months of July and early August.

Impact:

Yield and NET Income

Many corn plots have reported negative NETT incomes. However the total income does not include the income that farmers receive from the husks, cobs and stalks which on average is an additional $167 per hectare. The total cost also includes the farmer's salary for labor as some farmers hire labor and others do it themselves.

All synthetic corn is under drip irrigation and uses both DAP and UREA fertilizer. Of all the different corn varieties many of the farmers have grown the synthetic corn variety due to the high yields per hectare that this variety produced when tested in Bolan farm. Many of the corn plots are still not producing their expected yields, but

many of the plots have come close. Only a few farmers have produced yields that are equal to or lower than the traditional yield. Many of the crops that produced low yields are in Marja, Musaqulla, Panjwai, and a few plots in Central district. The Plots in Nahrisaraj, Khakriz, Nawa, have produced high yields but have still not been able to produce the yields that Bolan farm has produced. Farmers have been sowing their seeds on the appropriate dates and harvesting their plots at the appropriate times and many farmers that are following our best practices are producing yields that are over 100% higher than the average traditional yield. Of all yields synthetic corn has had the highest selling price in the market averaging at $0.14 per kg of corn. Below is an example of a plot that has scored a high 1/3rd average yield. Farmers in Nawa are able to get $0.15 per kg while farmers in Nahrisaraj are only able to get $0.11 per kg of yield.

Plot Reference Number	District	Planted Area (Sq Meters)	Drip	Sowing Date	Harvest date	Yield (kg) per Hectare	Traditional Yield	Yield Increase per Hectare	Selling Price	Net Income
A 186	Nahrisaraj	8000	8000	10-Jun-05	2-Nov-05	7,650	3500	4,150	$0.13	$159

With the exception of plot A 194 local corn has produced the lowest yields of all the other varietes. These plots have also produced NET Incomes that are far lower on average than other varieties of corn such as synthetic corn and Sha Nazy. The selling price of these yields on average is around the same as synthetic corn averaging at $0.14 per kg of corn. All local plots are under drip irrgation and used both DAP and UREA fertilizer. Local variety crops show some promise as farmers are able to achieve a NET income of $66 dollars, however farmers seem more interested in growing the high yielding varieties.

Sarhad Yellow corn produced a yield per hectare on average that is just above the traditional yield per hectare. The yield per hectare that is produced in Bolan farm is 4,683 kg per hectare, which is about half the amount of yield that the synthetic corn variety produced in Bolan farm. None of the Sarhad Yellow corn plots have been able to produce a yield equal to or higher than 4,683 kg per hectare, even with the aid of a drip irrigation system and DAP and UREA fertilizer. The selling prices for this variety are low compared to all other varieties of corn. Sarhad Yellow has an average selling price of $0.11 per kg of yield. All crops of this variety have been grown in Nad-I-Ali, which is why there is no variability in the cost. Due to the low selling price and the low yield Sarhad Yellow has produced the lowest NET income of all the crops.

Sha Nazy Corn Variety produced yields that are higher than Sarhad yellow corn, but significantly lower than synthetic corn variety. The selling price is also low compared to both the synthetic corn and local corn at $0.13 per kg. All of the Sha

Nazy plots have produced yields that are higher than the traditional yield however due to the low selling price all Sha Nazy plots have negative NET incomes. All plots of this variety are grown in Central district which is one of the reasons why there are such little differences in selling prices. All of these plots have been placed under drip irrigation systems and used both DAP and UREA fertilizer.

Cost and Income:

For corn crops our data shows that the more money (within reason) a farmer spends the higher the income that farmer achieves. Below is a table of Plot A 186. The farmer has paid about 2x the original amount that other farmers are paying for their crops. This has resulted in an income that is far higher then the traditional income resulting in a higher NET income at the end of the day.

Plot Reference Number	Plow / Ridges	DAP Fertilizer	UREA Fertilizer	Seed price	Irrigation Cost	Pest and Disease Control & Weeding Cost	Transport & Thresher Cost	Farmer Share	Mullah Share	Total Cost	Gross Income
A 186	$80.00	$60.00	$62.50	$6.25	$189.00	0	0	$239.94	$106.63	$805.32	$964
Traditional	$80.00	$0.00	$47.00	$15.80	$0.00	$0.00	$58.37	$163.33	$49.00	$413.5	$490.00
Best Practices	105	60	70	9	-	125	-	-	-	-	-

This example does not hold true to all the plots. Some farmers are still finding it hard to balance their budgets and regulating their expenditures. Plot A 243 has spent $492 dollars in irrigation cost per hectare, almost double of what he should be spending. There is little difference between the income and total cost of this plot.

A few practices that farmers need to initiate are weeding and pest control. According to our extension worker reports farmers have not been weeding their crops, which can be seen in many of our pictures. Pest and weeds have had devastating effects on many of the corn demonstrations this year, which has resulting in low Incomes for many crops. For local variety corn plots farmers are only spending around $48 on DAP fertilizer and $24 on UREA fertilizer, resulting in farmers using only half of the amount of fertilizer that is needed.

Farmers that have spent around $60 on DAP fertilizer and $70 on Urea fertilizer have produced high incomes and low costs. Plot A 195 has produced the second highest net income of $1205 and has only spent $891 dollars.

Conclusion:

It must be stated that the synthetic seed used for planting was 2nd generation seed. Best practices would not recommend the use of seed from the harvest of the 1st generation seed, as the characteristics that make the synthetic seed so good are lost with open pollination. The results achieved in our demonstrations of 2004 indicate that a yield of 9500 kg per hectare is possible from this variety.

What we have seen quite clearly this year is that it is not advisable to holdback seed from synthetically produced crops, but to buy new seed for planting each season. Different varieties of corn show vast differences in the amount of yield that the crop produces. The corn crop does not produce that high of an income compared to other crops. However farmers can use these crops for trade or fodder for the animals as not only the grain has value, but also the husks, cobs and stalks.

In order to increase the yield of each crop farmers need to place more focus on maintaining and caring for their plots. Farmers also need to realize that drip irrigation systems need to be constantly monitored and adjusted according to the weather. Many times farmers are still over or under irrigating their crops. Farmers are still not following best practices. Weeding being one of these that requires attention and many weeds can be found in the soil which takes away water, air and nutrients from the roots of corn. According to our best practices farmers need to weed their plots 3 times each growing season. Farmers need take more aggressive measures to prevent pests form harming crop plots as corn cobs have been ruined due to pests.

This year's corn crops have been low compared to previous years and the selling price has also decreased resulting in a bad year for corn. Through best practices and the aid of drip irrigation corn farmers can still produce positive NETT incomes.

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ALQIP Corn Yield Data

CADG Development Group

		Planted Area (Sq Metres)	Drip (Sq. Metres)	Trellis (Sq. Metres)	Under Plastic (Sq. metres)	None (Sq.Metres)
Selected Demonstration Plots	**Sq Metres**	**709,500**	**704,500**	**-**	**-**	**5,000**
	Hectares	**70.95**	**70.45**	**-**	**-**	**0.50**
	Jeribs	**355**	**352**	**-**	**-**	**3**
	No of Plots	**90**	**89**	**-**	**-**	**1**
Total Demonstration Plots	**Sq Metres**	**1,519,900**	**1,428,800**	**193,800**	**-**	**81,100**
	Hectares	**151.99**	**142.88**	**19.38**	**-**	**8.11**
	Jeribs	**760**	**714**	**97**	**-**	**41**
	No of Plots	**261**	**188**	**24**	**-**	**72**

	Total Cost per Hectare	Income (USD per Hectare)	Price (USD per Kg)	**NET Income (USD) per Hectare**	Traditional Yield (Kg per Hectare)	Yield (Kg per Hectare)	Increase/Decrease in Yield per Hectare	Percentage Increase/Decrease in Yield per Hectare
Avg / Ha	**$718**	**$675**	**$0.14**	**-$35**	**3,500 kg**	**5,010 kg**	**1,311 kg**	**36%**
Avg / Jerib	**$144**	**$135**	**$0.00**	**-$7**	**700 kg**	**1,002 kg**	**262 kg**	**0%**
Maximum	**$1,128**	**$1,260**	**$0.18**	**$417**	**6,500 kg**	**8,859 kg**	**5,359 kg**	**153%**
75% of Max	**$923**	**$968**	**$0.16**	**$191**	**5,000 kg**	**6,935 kg**	**3,335 kg**	**94%**
Nr Plots	**90**	**90**	**90**	**90**	**90**	**90**	**90**	**90**

Intercrop (Yes/No)	Year	Season (Winter, Summer or Perennial)	Office	Province	Ref Number (1per plot, same for intercrop)	Crop	Variety	District	Sowing Date	Drip (Sq. Metres)	Trellis (Sq. Metres)	Under Plastic (Sq. metres)	None (Sq.Metres)	Harvest date	Yield (Total Kg) per Plot	Price per Kg (Afs)	Total Cost per Hectare	Income (USD per Hectare)	Selling Price (USD per Kg)	NET Income (USD) per Hectare	Traditional Yield (Kg per Hectare)	Yield (Kg per Hectare)	Increase/Decrease in Yield per Hectare	Percentage Increase/Decrease in Yield per Hectare
	2005	Summ	H	SH	A 195	Corn	Synthetic	Nahrisaraj	27-Jun-05	8,000				5-Nov-05	7,088	6.8	$891	$1,205	$0.14	$314	3,500	8,859	5,359	153%
	2005	Summ	H	SH	A 193	Corn	Synthetic	Nahrisaraj	27-Jun-05	6,000				27-Oct-05	5,276	6.0	$930	$1,055	$0.12	$125	3,500	8,793	5,293	151%
	2005	Summ	H	SH	A 197	Corn	Synthetic	Nahrisaraj	17-Jun-05	6,000				22-Oct-05	5,133	5.5	$861	$941	$0.11	$80	3,500	8,555	5,055	144%
	2005	Peren	H	SH	A 157	Corn	synthetic	Nahrisaraj	29-May-05	7,000				26-Oct-05	5,710	6.0	$889	$979	$0.12	$90	3,500	8,157	4,657	133%
	2005	summ	K	KH	A 243	Corn	Synthetic	Panjwai	23-Jun-05	2,000				11-Oct-05	1,575	8.0	$1,128	$1,260	$0.16	$132	6,500	7,875	1,375	21%
	2005	Peren	H	SH	A 156	Corn	synthetic	Nahrisaraj	29-May-05	7,000				20-Oct-05	5,490	6.0	$875	$941	$0.12	$66	3,500	7,843	4,343	124%
	2005	Summ	H	SH	A 194	Corn	Local	Nahrisaraj	25-Jun-05	6,000				20-Oct-05	4,698	6.0	$844	$940	$0.12	$95	3,500	7,830	4,330	124%
	2005	Summ	H	SH	A 192	Corn	Synthetic	Nahrisaraj	20-Jun-05	6,000				20-Oct-05	4,665	6.0	$894	$933	$0.12	$39	3,500	7,775	4,275	122%
	2005	Summ	H	SH	A 191	Corn	Synthetic	Nahrisaraj	28-Jun-05	6,000				27-Oct-05	4,600	5.5	$848	$843	$0.11	-$4	3,500	7,667	4,167	119%
	2005	Summ	H	SH	A 186	Corn	Synthetic	Nahrisaraj	10-Jun-05	8,000				2-Nov-05	6,120	6.3	$805	$964	$0.13	$159	3,500	7,650	4,150	119%
	2005	summ	K	KH	A 232	Corn	Synthetic	Khakriz	22-Jun-05	5,500				17-Nov-05	4,200	8.0	$866	$1,222	$0.16	$356	4,545	7,636	3,091	68%
	2005	Summ	H	SH	A 196	Corn	Synthetic	Nahrisaraj	20-Jun-05	6,000				19-Oct-05	4,500	5.5	$845	$825	$0.11	-$20	3,500	7,500	4,000	114%
	2005	summ	H	SH	A 255	Corn	synthetic	Nahrisaraj	23-Jun-05	6,000				21-Oct-05	4,500	5.5	$785	$825	$0.11	$40	3,500	7,500	4,000	114%
	2005	Summ	H	SH	A 188	Corn	Synthetic	Nahrisaraj	5-Jun-05	7,000				22-Oct-05	5,175	6.0	$862	$887	$0.12	$25	3,500	7,393	3,893	111%
	2005	summ	H	SH	A 256	Corn	synthetic	Nahrisaraj	1-Jul-05	8,000				25-Oct-05	5,895	5.5	$717	$811	$0.11	$93	3,500	7,369	3,869	111%
	2005	Summ	H	SH	A 190	Corn	Synthetic	Nahrisaraj	28-Jun-05	6,000				25-Oct-05	4,400	6.0	$852	$880	$0.12	$28	3,500	7,333	3,833	110%
	2005	Summ	H	SH	A 214	Corn	Synthetic	Garmsir	12-Jun-05	8,000				24-Oct-05	5,693	5.0	$854	$712	$0.10	-$143	3,500	7,116	3,616	103%
	2005	Summ	H	SH	A 218	Corn	Synthetic	Garmsir	25-Jun-05	8,000				21-Oct-05	5,625	5.0	$849	$703	$0.10	-$146	3,500	7,031	3,531	101%
	2005	Summ	H	SH	A 213	Corn	Synthetic	Garmsir	11-Jun-05	8,000				23-Oct-05	5,468	5.0	$840	$684	$0.10	-$157	3,500	6,835	3,335	95%
	2005	Summ	H	SH	A 202	Corn	Synthetic	Nawa	18-Jun-05	8,000				20-Oct-05	5,400	7.5	$960	$1,013	$0.15	$53	3,500	6,750	3,250	93%
	2005	Summ	H	SH	A 203	Corn	Synthetic	Nawa	19-Jun-05	6,000				20-Oct-05	4,050	7.5	$1,070	$1,013	$0.15	-$57	3,500	6,750	3,250	93%
	2005	summ	K	KH	A 244	Corn	Synthetic	Arghandab	17-Jun-05	6,000				12-Nov-05	4,050	7.0	$529	$945	$0.14	$417	5,000	6,750	1,750	35%
	2005	summ	H	SH	A 252	Corn	Synthetic	Nawa	2-Jul-05	8,000				5-Nov-05	5,400	7.5	$801	$1,013	$0.15	$211	3,500	6,750	3,250	93%

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Intercrop (Yes/No)	Year	Season (Winter, Summer or Perennial)	Office	Province	Ref Number (1per plot, same for intercrop)	Crop	Variety	District	Sowing Date	Drip (Sq. Metres)	Trellis (Sq. Metres)	Under Plastic (Sq. metres)	None (Sq.Metres)	Harvest date	Yield (Total Kg) per Plot	Price per Kg (Afs)	Total Cost per Hectare	Income (USD per Hectare)	Selling Price (USD per Kg)	NET Income (USD) per Hectare	Traditional Yield (Kg per Hectare)	Yield (Kg per Hectare)	Increase/Decrease in Yield per Hectare	Percentage Increase/Decrease in Yield per Hectare
	2005	Sumn	H	SH	A 216	Corn	Synthetic	Garmsir	21-Jun-05	8,000				24-Oct-05	5,355	5.0	$836	$669	$0.10	-$166	3,500	6,694	3,194	91%
	2005	Sumn	H	SH	A 217	Corn	Synthetic	Garmsir	24-Jun-05	8,000				23-Oct-05	5,040	5.0	$818	$630	$0.10	-$188	3,500	6,300	2,800	80%
	2005	Sumn	H	SH	A 182	Corn	Synthetic	Nahrisaraj	8-Jun-05	7,000				21-Oct-05	4,320	6.3	$738	$783	$0.13	$45	3,500	6,171	2,671	76%
	2005	Sumn	H	SH	A 215	Corn	Synthetic	Garmsir	18-Jun-05	8,000				25-Oct-05	4,883	5.0	$810	$610	$0.10	-$200	3,500	6,104	2,604	74%
	2005	Sumn	H	SH	A 208	Corn	Synthetic	Nawa	26-Jun-05	10,000				21-Oct-05	6,075	7.5	$709	$911	$0.15	$202	3,500	6,075	2,575	74%
	2005	Sumn	H	SH	A 212	Corn	Synthetic	Nawa	24-Jun-05				5,000	28-Oct-05	3,000	7.5	$915	$900	$0.15	-$15	3,500	6,000	2,500	71%
	2005	sumn	K	KH	A 239	Corn	Synthetic	Panjwai	4-Jul-05	4,000				20-Oct-05	2,400	7.0	$829	$840	$0.14	$11	4,500	6,000	1,500	33%
	2005	Sumn	H	SH	A 183	Corn	Synthetic	Nahrisaraj	10-Jun-05	8,000				18-Oct-05	4,750	6.0	$732	$713	$0.12	-$20	3,500	5,938	2,438	70%
	2005	Sumn	H	SH	A 205	Corn	Synthetic	Nawa	22-Jun-05	9,000				16-Oct-05	5,130	7.5	$492	$855	$0.15	$363	3,500	5,700	2,200	63%
	2005	sumn	K	KH	A 234	Corn	Synthetic	Zhari	7-Jun-05	4,000				10-Oct-05	2,256	7.0	$994	$790	$0.14	-$204	5,250	5,640	390	7%
	2005	Sumn	H	SH	A 184	Corn	Synthetic	Nahrisaraj	11-Jun-05	8,000				19-Oct-05	4,500	6.0	$666	$675	$0.12	$10	3,500	5,625	2,125	61%
	2005	Sumn	H	SH	A 204	Corn	Synthetic	Nawa	21-Jun-05	8,000				15-Oct-05	4,500	7.5	$796	$844	$0.15	$48	3,500	5,625	2,125	61%
	2005	sumn	K	KH	A 231	Corn	Synthetic	Khakriz	23-Jun-05	6,000				11-Nov-05	3,375	8.0	$655	$900	$0.16	$245	3,333	5,625	2,292	69%
	2005	Sumn	H	SH	A 187	Corn	Synthetic	Nahrisaraj	11-Jun-05	8,000				25-Oct-05	4,480	6.0	$693	$672	$0.12	-$21	3,500	5,600	2,100	60%
	2005	Sumn	H	SH	A 185	Corn	Synthetic	Nahrisaraj	12-Jun-05	8,000				19-Oct-05	4,338	6.0	$666	$651	$0.12	-$15	3,500	5,423	1,923	55%
	2005	sumn	H	SH	A 247	Corn	Shanazi	Central area	1-Jul-05	6,000				17-Oct-05	3,250	6.0	$694	$650	$0.12	-$44	3,500	5,417	1,917	55%
	2005	Sumn	H	SH	A 164	Corn	Synthetic	Central area	26-Jun-05	6,000				19-Oct-05	3,200	6.0	$631	$640	$0.12	$9	3,500	5,333	1,833	52%
	2005	sumn	H	SH	A 248	Corn	Shanazi	Central area	10-Jul-05	6,000				18-Oct-05	3,200	6.0	$532	$640	$0.12	$108	3,500	5,333	1,833	52%
	2005	sumn	K	KH	A 236	Corn	Synthetic	Zhari	15-Jun-05	4,000				22-Oct-05	2,100	7.0	$985	$735	$0.14	-$250	5,000	5,250	250	5%
	2005	Sumn	H	NH	A 223	Corn	Synthetic	Musaqlla	27-Jun-05	8,000				1-Nov-05	4,160	8.0	$918	$832	$0.16	-$86	3,500	5,200	1,700	49%
	2005	Sumn	H	SH	A 206	Corn	Synthetic	Nawa	23-Jun-05	10,000				16-Oct-05	5,175	7.5	$709	$776	$0.15	$67	3,500	5,175	1,675	48%
	2005	Sumn	H	SH	A 211	Corn	Synthetic	Nawa	25-Jun-05	10,000				25-Oct-05	5,120	7.5	$709	$768	$0.15	$59	3,500	5,120	1,620	46%
	2005	Peren	H	SH	A 158	Corn	synthetic	Nawa	29-May-05	10,000				12-Oct-05	4,900	7.5	$768	$735	$0.15	-$33	3,500	4,900	1,400	40%
	2005	Sumn	H	SH	A 168	Corn	Sha Nazy	Central area	25-Jun-05	7,000				15-Oct-05	3,375	6.0	$666	$579	$0.12	-$88	3,500	4,821	1,321	38%
	2005	sumn	H	SH	A 250	Corn	Synthetic	Nawa	1-Jul-05	10,000				26-Oct-05	4,800	7.5	$723	$720	$0.15	-$3	3,500	4,800	1,300	37%
	2005	sumn	H	NH	A 257	Corn	Synthetic	KaJaki	2-Jul-05	10,000				15-Nov-05	4,770	8.0	$748	$763	$0.16	$15	3,500	4,770	1,270	36%
	2005	Sumn	H	NH	A 219	Corn	Synthetic	Nawzad	18-Jun-05	8,000				12-Nov-05	3,810	8.0	$691	$762	$0.16	$71	3,500	4,763	1,263	36%
	2005	Sumn	H	SH	A 200	Corn	Synthetic	Nawa	9-Jun-05	10,000				30-Oct-05	4,725	7.5	$756	$709	$0.15	-$48	3,500	4,725	1,225	35%
	2005	sumn	K	KH	A 235	Corn	Synthetic	Zhari	8-Jun-05	4,000				1-Nov-05	1,878	7.0	$976	$657	$0.14	-$318	4,450	4,695	245	6%
	2005	Sumn	H	SH	A 169	Corn	Sha Nazy	Central area	26-Jun-05	7,000				17-Oct-05	3,285	6.0	$564	$563	$0.12	-$1	3,500	4,693	1,193	34%
	2005	sumn	H	SH	A 251	Corn	Synthetic	Nawa	1-Jul-05	10,000				1-Nov-05	4,650	7.5	$713	$698	$0.15	-$16	3,500	4,650	1,150	33%
	2005	Sumn	H	SH	A 210	Corn	Synthetic	Nawa	27-Jun-05	8,000				2-Oct-05	3,645	7.5	$796	$683	$0.15	-$113	3,500	4,556	1,056	30%
	2005	Sumn	H	SH	A 174	Corn	Synthetic	Central area	21-Jun-05	5,000				8-Oct-05	2,250	6.0	$578	$540	$0.12	-$38	3,500	4,500	1,000	29%
	2005	Sumn	H	SH	A 201	Corn	Synthetic	Nawa	3-Jun-05	10,000				25-Oct-05	4,500	7.5	$740	$675	$0.15	-$65	3,500	4,500	1,000	29%
	2005	Sumn	H	SH	A 209	Corn	Synthetic	Nawa	26-Jun-05	10,000				18-Oct-05	4,500	7.5	$709	$675	$0.15	-$34	3,500	4,500	1,000	29%
	2005	Sumn	H	NH	A 221	Corn	Synthetic	Sangin	28-Jun-05	8,000				15-Nov-05	3,600	7.5	$799	$675	$0.15	-$124	3,500	4,500	1,000	29%
	2005	Sumn	H	SH	A 167	Corn	Synthetic	Central area	23-Jun-05	7,000				19-Oct-05	3,141	6.0	$569	$538	$0.12	-$30	3,500	4,487	987	28%
	2005	Sumn	H	SH	A 171	Corn	Sha Nazy	Central area	28-Jun-05	8,000				18-Oct-05	3,568	6.0	$532	$535	$0.12	$3	3,500	4,460	960	27%
	2005	Sumn	H	NH	A 228	Corn	Synthetic	Musaqlla	27-Jun-05	10,000				20-Oct-05	4,275	8.5	$825	$727	$0.17	-$98	3,500	4,275	775	22%
	2005	Sumn	H	SH	A 172	Corn	Synthetic	Central area	28-Jun-05	7,000				16-Oct-05	2,880	6.0	$551	$494	$0.12	-$57	3,500	4,114	614	18%
	2005	Sumn	H	NH	A 220	Corn	Synthetic	Nawzad	14-Jun-05	10,000				15-Nov-05	4,080	8.0	$641	$653	$0.16	$12	3,500	4,080	580	17%
	2005	Sumn	H	NH	A 225	Corn	Synthetic	Musaqlla	21-Jun-05	10,000				28-Oct-05	4,055	8.0	$782	$649	$0.16	-$133	3,500	4,055	555	16%

Intercrop (Yes/No)	Year	Season (Winter, Summer or Perennial)	Office	Province	Ref Number (1per plot, same for intercrop)	Crop	Variety	District	Sowing Date	Drip (Sq. Metres)	Trellis (Sq. Metres)	Under Plastic (Sq. metres)	None (Sq.Metres)	Harvest date	Yield (Total Kg) per Plot	Price per Kg (Afs)	Total Cost per Hectare	Income (USD per Hectare)	Selling Price (USD per Kg)	NET Income (USD) per Hectare	Traditional Yield (Kg per Hectare)	Yield (Kg per Hectare)	Increase/Decrease in Yield per Hectare	Percentage Increase/Decrease in Yield per Hectare
	2005	Sumn	H	NH	A 227	Corn	Synthetic	Musaqlla	23-Jun-05	10,000				23-Oct-05	4,050	8.0	$719	$648	$0.16	-$71	3,500	4,050	550	16%
	2005	Sumn	H	SH	A 173	Corn	Synthetic	Central area	28-Jun-05	7,000				14-Oct-05	2,790	6.0	$514	$478	$0.12	-$36	3,500	3,986	486	14%
	2005	sumn	H	SH	A 246	Corn	Sarhad yellow	Nad-I-Ali	8-Jul-05	10,000				15-Nov-05	3,960	5.5	$622	$436	$0.11	-$186	3,500	3,960	460	13%
	2005	Sumn	H	SH	A 170	Corn	Sha Nazy	Central area	26-Jun-05	8,000				10-Oct-05	3,150	6.0	$501	$473	$0.12	-$29	3,500	3,938	438	13%
	2005	sumn	H	NH	A 258	Corn	Synthetic	KaJaki	3-Jul-05	8,000				20-Nov-05	3,150	8.0	$790	$630	$0.16	-$160	3,500	3,938	438	13%
	2005	Sumn	H	NH	A 230	Corn	Synthetic	Musaqlla	1-Jun-05	10,000				21-Oct-05	3,914	8.0	$739	$626	$0.16	-$113	3,500	3,914	414	12%
	2005	Sumn	H	SH	A 162	Corn	Sarhad Yellow	Nad-I-Ali	26-Jun-05	8,000				5-Nov-05	3,060	5.5	$659	$421	$0.11	-$238	3,500	3,825	325	9%
	2005	Sumn	H	NH	A 222	Corn	Synthetic	Musaqlla	28-Jun-05	10,000				20-Oct-05	3,614	8.5	$695	$614	$0.17	-$81	3,500	3,614	114	3%
	2005	Sumn	H	NH	A 226	Corn	Synthetic	Musaqlla	22-Jun-05	10,000				30-Oct-05	3,600	8.0	$683	$576	$0.16	-$107	3,500	3,600	100	3%
	2005	Sumn	H	SH	A 161	Corn	Sarhad Yellow	Nad-I-Ali	20-Jun-05	6,000				2-Nov-05	2,091	5.5	$648	$383	$0.11	-$265	3,500	3,485	-15	0%
	2005	sumn	H	SH	A 245	Corn	synthetic	Central area	30-May-05	9,000				15-Oct-05	3,105	6.0	$495	$414	$0.12	-$81	3,500	3,450	-50	-1%
	2005	Sumn	H	SH	A 165	Corn	Synthetic	Central area	22-Jun-05	10,000				20-Oct-05	3,400	6.0	$472	$408	$0.12	-$64	3,500	3,400	-100	-3%
	2005	sumn	H	NH	A 261	Corn	Synthetic	Musaqlla	15-Jun-05	8,000				25-Oct-05	2,587	8.8	$569	$698	$0.18	-$129	3,500	3,234	-266	-8%
	2005	sumn	H	NH	A 259	Corn	Synthetic	Musaqlla	1-Jul-05	10,000				1-Nov-05	3,150	8.0	$633	$504	$0.16	-$129	3,500	3,150	-350	-10%
	2005	Sumn	H	NH	A 224	Corn	Synthetic	Musaqlla	25-Jun-05	10,000				25-Oct-05	2,895	8.0	$619	$463	$0.16	-$156	3,500	2,895	-605	-17%
	2005	Sumn	H	SH	A 163	Corn	Sarhad Yellow	Nad-I-Ali	27-Jun-05	7,000				9-Nov-05	2,010	5.5	$480	$316	$0.11	-$164	3,500	2,871	-629	-18%
	2005	Sumn	H	NH	A 229	Corn	Synthetic	Musaqlla	28-Jun-05	10,000				24-Oct-05	2,700	8.0	$617	$432	$0.16	-$185	3,500	2,700	-800	-23%
	2005	Sumn	H	SH	A 207	Corn	Synthetic	Nawa	24-Jun-05	10,000				20-Oct-05	2,700	7.5	$709	$405	$0.15	-$304	3,500	2,700	-800	-23%
	2005	Sumn	H	SH	A 166	Corn	Synthetic	Central area	24-Jun-05	10,000				12-Oct-05	2,500	6.0	$562	$300	$0.12	-$262	3,500	2,500	-1,000	-29%
	2005	sumn	H	NH	A 260	Corn	Synthetic	Musaqlla	6-Jun-05	10,000				28-Oct-05	2,182	8.0	$571	$349	$0.16	-$222	3,500	2,182	-1,318	-38%
	2005	Sumn	H	SH	A 178	Corn	Local	Marja	23-Jun-05	9,000				22-Nov-05	1,950	6.5	$480	$282	$0.13	-$198	3,500	2,167	-1,333	-38%
	2005	Sumn	H	SH	A 175	Corn	Local	Marja	20-Jun-05	10,000				15-Nov-05	1,890	7.1	$463	$269	$0.14	-$194	3,500	1,890	-1,610	-46%
	2005	Sumn	H	SH	A 176	Corn	Local	Marja	21-Jun-05	10,000				23-Nov-05	1,870	7.0	$432	$262	$0.14	-$170	3,500	1,870	-1,630	-47%
	2005	sumn	H	SH	A 249	Corn	Local	Marja	9-Jul-05	10,000				24-Nov-05	1,680	6.5	$385	$218	$0.13	-$167	3,500	1,680	-1,820	-52%
	2005	Sumn	H	SH	A 177	Corn	Local	Marja	22-Jun-05	9,000				21-Nov-05	1,300	7.0	$452	$202	$0.14	-$250	3,500	1,444	-2,056	-59%

ALQIP Corn Cost Data

CADG Development Group

		Planted Area (Sq Metres)	Drip (Sq. Metres)	Trellis (Sq. Metres)	Under Plastic (Sq. metres)	None (Sq.Metres)
Selected Demonstration Plots	**Sq Metres**	709,500	704,500	-	-	5,000
	Hectares	70.95	70.45	-	-	0.50
	Jeribs	355	352	-	-	3
	No of Plots	90	89	-	-	1
Total Demonstration Plots	**Sq Metres**	1,519,900	1,428,800	193,800	-	81,100
	Hectares	151.99	142.88	19.38	-	8.11
	Jeribs	760	714	97	-	41
	No of Plots	261	188	24	-	72

	Plow/Leveling/Ridges Costs (USD) per Hectare	DAP Fertilizer (USD) Costs per Hectare	Fertilizer (UREA) Cost per Hectare	Seed Pricing (USD) per Hectare	Irrigation Costs (USD) per Hectare	Pesticides Cost (USD) per Hectare	Weeding Costs (USD) per Hectare	Transportation Costs (USD) per Hectare	Thresher Costs (USD) per Hectare	Sowing/Havesting Costs (USD) per Hectare	Farmer Share (USD) per Hectare	Mulla Share (USD) per Hectare	Other Cost (USD) per Hectare	Total Cost per Hectare	Income (USD per Hectare)	Price (USD per Kg)	NET Income (USD) per Hectare	Yield (Kg per Hectare)	Increase/Decrease in Yield per Hectare	Percentage Increase/Decrease in Yield per Hectare
Avg / Ha	**$80.00**	**$48.00**	**$47.00**	**$15.00**	**$250.00**			**$24.52**	**$33.75**		**$190.16**	**$54.86**	**$13.67**	**$718**	**$675**	**$0.14**	**-$35.06**	**5,010 kg**	**1,311 kg**	**36%**
Avg / Jerib	**$16.00**	**$9.60**	**$9.40**	**$3.00**	**$50.00**			**$4.90**	**$6.75**		**$38.03**	**$10.97**	**$2.73**	**$144**	**$135**		**-$7.01**	**1,002 kg**	**262 kg**	
Maximum	**$200**	**$150**	**$140**	**$30.00**	**$492**		**$45**	**$90**	**$67**	**$15**	**$407**	**$141**	**$16**	**$1,128**	**$1,260**	**$0.18**	**$417**	**8,859 kg**	**5,359 kg**	**153%**
75% of Max	**$140**	**$99**	**$94**	**$22.50**	**$371**		**$23**	**$57**	**$50**	**$7**	**$299**	**$98**	**$15**	**$923**	**$968**	**$0.16**	**$191**	**6,935 kg**	**3,335 kg**	**94%**
Nr Plots	**90**	**74**	**90**	**61**	**89**	**8**	**8**	**44**	**89**	**15**	**90**	**90**	**18**	**90**	**90**	**90**	**90**	**90**	**90**	**90**

Intercrop (Yes/No)	Year	Season (Winter or Summer)	Office	Province	Ref Number (1 per plot, same for intercrop)	Crop	Variety	District	Sowing Date	Drip (Sq. Metres)	Trellis (Sq. Metres)	Under Plastic (Sq. metres)	None (Sq.Metres)	Harvest date	Plow/Leveling/Ridges Costs (USD) per Hectare	DAP Fertilizer (USD) Costs per Hectare	Fertilizer (UREA) Cost per Hectare	Seed Pricing (USD) per Hectare	Irrigation Costs (USD) per Hectare	Pesticides Cost (USD) per Hectare	Weeding Costs (USD) per Hectare	Transportation Costs (USD) per Hectare	Thresher Costs (USD) per Hectare	Sowing/Havesting Costs (USD) per Hectare	Farmer Share (USD) per Hectare	Mulla Share (USD) per Hectare	Other Cost (USD) per Hectare	Total Cost per Hectare	Income (USD per Hectare)	Selling Price (USD per Kg)	NET Income (USD) per Hectare	Yield (Kg per Hectare)	Increase/Decrease in Yield per Hectare	Percentage Increase/Decrease in Yield per Hectare
	2005	Summer	H	SH	A 195	Corn	Synthetic	Nahrisaraj	27-Jun-05	8,000				5-Nov-05	78.75	75.00	75.00	6.25	215.25			37.50	34.88		236.25	131.73		891	1,205	$0.14	314	8,859	5,359	153%
	2005	Summer	H	SH	A 193	Corn	Synthetic	Nahrisaraj	27-Jun-05	6,000				27-Oct-05	76.67	46.67	60.00	8.40	320.67				52.20		253.17	112.50		930	1,055	$0.12	125	8,793	5,293	151%
	2005	Summer	H	SH	A 197	Corn	Synthetic	Nahrisaraj	17-Jun-05	6,000				22-Oct-05	93.33	46.67	43.33	9.67	292.13				51.30		224.47	99.77		861	941	$0.11	80	8,555	5,055	144%
	2005	Perennial	H	SH	A 157	Corn	synthetic	Nahrisaraj	29-May-05	7,000				26-Oct-05	91.43	80.00	60.00	8.00	263.06				49.71		233.14	103.43		889	979	$0.12	90	8,157	4,657	133%
	2005	summer	K	KH	A 243	Corn	Synthetic	Panjwai	23-Jun-05	2,000				11-Oct-05	110.00	150.00			492.00						235.00	141.00		1,128	1,260	$0.16	132	7,875	1,375	21%
	2005	Perennial	H	SH	A 156	Corn	synthetic	Nahrisaraj	29-May-05	7,000				20-Oct-05	91.43	80.00	60.00	10.40	257.37				46.29		228.46	101.54		875	941	$0.12	66	7,843	4,343	124%
	2005	Summer	H	SH	A 194	Corn	Local	Nahrisaraj	25-Jun-05	6,000				20-Oct-05	106.67	46.67	43.33	7.50	284.37				46.80		210.17	98.93		844	940	$0.12	95	7,830	4,330	124%
	2005	Summer	H	SH	A 192	Corn	Synthetic	Nahrisaraj	20-Jun-05	6,000				20-Oct-05	80.00	46.67	46.67	7.50	344.30				46.80		222.67	98.97		894	933	$0.12	39	7,775	4,275	122%
	2005	Summer	H	SH	A 191	Corn	Synthetic	Nahrisaraj	28-Jun-05	6,000				27-Oct-05	93.33	93.33	43.33	9.67	273.80				45.00		200.23	89.00		848	843	$0.11	-4	7,667	4,167	119%
	2005	Summer	H	SH	A 186	Corn	Synthetic	Nahrisaraj	10-Jun-05	8,000				2-Nov-05	80.00	60.00	62.50	6.25	189.00			30.00	31.00		239.94	106.63		805	964	$0.13	159	7,650	4,150	119%
	2005	summer	K	KH	A 232	Corn	Synthetic	Khakriz	22-Jun-05	5,500				17-Nov-05		75.00	90.00		230.00						407.27	63.50		866	1,222	$0.16	356	7,636	3,091	68%
	2005	Summer	H	SH	A 196	Corn	Synthetic	Nahrisaraj	20-Jun-05	6,000				19-Oct-05	126.67	46.67	43.33	8.00	291.03				45.00		196.87	87.50		845	825	$0.11	-20	7,500	4,000	114%
	2005	summer	H	SH	A 255	Corn	synthetic	Nahrisaraj	23-Jun-05	6,000				21-Oct-05	80.00	46.67	43.33	7.50	276.67				45.00		198.67	87.50		785	825	$0.11	40	7,500	4,000	114%
	2005	Summer	H	SH	A 188	Corn	Synthetic	Nahrisaraj	5-Jun-05	7,000				22-Oct-05	91.43	80.00	60.00	7.71	272.11				44.34		212.46	94.43		862	887	$0.12	25	7,393	3,893	111%
	2005	summer	H	SH	A 256	Corn	synthetic	Nahrisaraj	1-Jul-05	8,000				25-Oct-05	80.00	70.00	32.50	6.75	204.38				43.88		193.63	86.05		717	811	$0.11	93	7,369	3,869	111%
	2005	Summer	H	SH	A 190	Corn	Synthetic	Nahrisaraj	28-Jun-05	6,000				25-Oct-05	80.00	46.67	46.67	7.50	323.47				42.30		211.50	94.00		852	880	$0.12	28	7,333	3,833	110%
	2005	Summer	H	SH	A 214	Corn	Synthetic	Garmsir	12-Jun-05	8,000				24-Oct-05	80.00	33.75	60.00		363.25				28.48	14.63	237.21	37.15		854	712	$0.10	-143	7,116	3,616	103%
	2005	Summer	H	SH	A 218	Corn	Synthetic	Garmsir	25-Jun-05	8,000				21-Oct-05	80.00	33.75	60.00		363.25				28.13	13.50	234.38	36.43		849	703	$0.10	-146	7,031	3,531	101%
	2005	Summer	H	SH	A 213	Corn	Synthetic	Garmsir	11-Jun-05	8,000				23-Oct-05	80.00	33.75	60.00		363.25				27.33	12.75	227.83	35.55		840	684	$0.10	-157	6,835	3,335	95%
	2005	Summer	H	SH	A 202	Corn	Synthetic	Nawa	18-Jun-05	8,000				20-Oct-05	100.00		70.00		330.00			90.00	40.50		227.83	101.25		960	1,013	$0.15	53	6,750	3,250	93%
	2005	Summer	H	SH	A 203	Corn	Synthetic	Nawa	19-Jun-05	6,000				20-Oct-05	100.00		70.00		440.00			90.00	40.50		227.80	101.27		1,070	1,013	$0.15	-57	6,750	3,250	93%
	2005	summer	K	KH	A 244	Corn	Synthetic	Arghandab	17-Jun-05	6,000				12-Nov-05					200.00						219.00	109.50		529	945	$0.14	417	6,750	1,750	35%
	2005	summer	H	SH	A 252	Corn	Synthetic	Nawa	2-Jul-05	8,000				5-Nov-05	80.00	33.75	60.00		363.25				26.55	14.08	188.75	35.08		801	1,013	$0.15	211	6,750	3,250	93%
	2005	Summer	H	SH	A 216	Corn	Synthetic	Garmsir	21-Jun-05	8,000				24-Oct-05	80.00	33.75	60.00		363.25				26.55	14.08	223.13	35.08		836	669	$0.10	-166	6,694	3,194	91%
	2005	Summer	H	SH	A 217	Corn	Synthetic	Garmsir	24-Jun-05	8,000				23-Oct-05	80.00	33.75	60.00		363.25				25.20	13.13	210.00	33.00		818	630	$0.10	-188	6,300	2,800	80%
	2005	Summer	H	SH	A 182	Corn	Synthetic	Nahrisaraj	8-Jun-05	7,000				21-Oct-05	68.57	40.00	25.71	6.43	306.14				36.26		176.29	78.34		738	783	$0.13	45	6,171	2,671	76%
	2005	Summer	H	SH	A 215	Corn	Synthetic	Garmsir	18-Jun-05	8,000				25-Oct-05	80.00	33.75	60.00		363.25				25.38	12.38	203.46	32.18		810	610	$0.10	-200	6,104	2,604	74%
	2005	Summer	H	SH	A 208	Corn	Synthetic	Nawa	26-Jun-05	10,000				21-Oct-05	83.00	52.00	47.00	15.00	219.00			42.00	35.00		168.00	48.00		709	911	$0.15	202	6,075	2,575	74%
	2005	Summer	H	SH	A 212	Corn	Synthetic	Nawa	24-Jun-05				5,000	28-Oct-05	200.00	54.00	70.00					82.64	55.36		313.88	139.52		915	900	$0.15	-15	6,000	2,500	71%
	2005	summer	K	KH	A 239	Corn	Synthetic	Panjwai	4-Jul-05	4,000				20-Oct-05	125.00	83.30	70.00	12.00	165.70		45.00	31.00			247.50	49.50		829	840	$0.14	11	6,000	1,500	33%
	2005	Summer	H	SH	A 183	Corn	Synthetic	Nahrisaraj	10-Jun-05	8,000				18-Oct-05	80.00	35.00	32.50	5.63	298.18				37.40		168.75	75.00		732	713	$0.12	-20	5,938	2,438	70%

RAMP
Rebuilding Agricultural Markets Program Afghanistan

Central Asia development group

Intercrop (Yes/No)	Year	Season (Winter or Summer)	Office	Province	Ref Number (1per plot, same for intercrop)	Crop	Variety	District	Sowing Date	Drip (Sq. Metres)	Trellis (Sq. Metres)	Under Plastic (Sq. metres)	None (Sq.Metres)	Harvest date	Plow/Leveling/Ridges Costs (USD) per Hectare	DAP Fertilizer (USD) Costs per Hectare	Fertilizer (UREA) Cost per Hectare	Seed Pricing (USD) per Hectare	Irrigation Costs (USD) per Hectare	Pesticides Cost (USD) per Hectare	Weeding Costs (USD) per Hectare	Transportation Costs (USD) per Hectare	Thresher Costs (USD) per Hectare	Sowing/Havesting Costs (USD) per Hectare	Farmer Share (USD) per Hectare	Mulla Share (USD) per Hectare	Other Cost (USD) per Hectare	Total Cost per Hectare	Income (USD per Hectare)	Selling Price (USD per Kg)	NET Income (USD) per Hectare	Yield (Kg per Hectare)	Increase/Decrease in Yield per Hectare	Percentage Increase/Decrease in Yield per Hectare
	2005	Summer	H	SH	A 205	Corn	Synthetic	Nawa	22-Jun-05	9,000				16-Oct-05	85.56	48.89	25.56	20.00	180.00			15.56	13.33		68.89	34.44		492	855	$0.15	363	5,700	2,200	63%
	2005	summer	K	KH	A 234	Corn	Synthetic	Zhari	7-Jun-05	4,000				10-Oct-05	50.00	100.00	140.00		325.00				50.00		234.90	93.96		994	790	$0.14	-204	5,640	390	7%
	2005	Summer	H	SH	A 184	Corn	Synthetic	Nahrisaraj	11-Jun-05	8,000				19-Oct-05	80.00	35.00	32.50	5.63	247.88				33.75		159.75	71.00		666	675	$0.12	10	5,625	2,125	61%
	2005	Summer	H	SH	A 204	Corn	Synthetic	Nawa	21-Jun-05	8,000				15-Oct-05	78.75	40.00	52.50	5.00	288.75			38.75	35.00		197.50	60.00		796	844	$0.15	48	5,625	2,125	61%
	2005	summer	K	KH	A 231	Corn	Synthetic	Khakriz	23-Jun-05	6,000				11-Nov-05		75.00	70.00	10.00	250.00						200.00	50.00		655	900	$0.16	245	5,625	2,292	69%
	2005	Summer	H	SH	A 187	Corn	Synthetic	Nahrisaraj	11-Jun-05	8,000				25-Oct-05	60.00	47.50	45.00	5.63	265.23				33.75		163.00	72.45		693	672	$0.12	-21	5,600	2,100	60%
	2005	Summer	H	SH	A 185	Corn	Synthetic	Nahrisaraj	12-Jun-05	8,000				19-Oct-05	80.00	35.00	32.50	5.63	259.70				30.38		154.28	68.55		666	651	$0.12	-15	5,423	1,923	55%
	2005	summer	H	SH	A 247	Corn	Shanazi	Central area	1-Jul-05	6,000				17-Oct-05	66.67	41.67	25.00		278.00			23.33	31.50		157.50	70.00		694	650	$0.12	-44	5,417	1,917	55%
	2005	Summer	H	SH	A 164	Corn	Synthetic	Central area	26-Jun-05	6,000				19-Oct-05	66.67	41.67	25.00		219.00			23.33	31.50		155.23	69.00		631	640	$0.12	9	5,333	1,833	52%
	2005	summer	H	SH	A 248	Corn	Shanazi	Central area	10-Jul-05	6,000				18-Oct-05	66.67	41.67	25.00		120.00			23.33	31.50		155.23	69.00		532	640	$0.12	108	5,333	1,833	52%
	2005	summer	K	KH	A 236	Corn	Synthetic	Zhari	15-Jun-05	4,000				22-Oct-05	50.00	100.00	120.00	30.00	325.00				50.00		221.30	88.50		985	735	$0.14	-250	5,250	250	5%
	2005	Summer	H	NH	A 223	Corn	Synthetic	Musaqlla	27-Jun-05	8,000				1-Nov-05	80.00	50.00	60.00	15.00	274.63				66.55		307.38	64.70		918	832	$0.16	-86	5,200	1,700	49%
	2005	Summer	H	SH	A 206	Corn	Synthetic	Nawa	23-Jun-05	10,000				16-Oct-05	83.00	52.00	47.00	15.00	219.00			42.00	35.00		168.00	48.00		709	776	$0.15	67	5,175	1,675	48%
	2005	Summer	H	SH	A 211	Corn	Synthetic	Nawa	25-Jun-05	10,000				25-Oct-05	83.00	52.00	47.00	15.00	219.00			42.00	35.00		168.00	48.00		709	768	$0.15	59	5,120	1,620	46%
	2005	Perennial	H	SH	A 158	Corn	synthetic	Nawa	29-May-05	10,000				12-Oct-05	100.00		70.00		264.00			65.34	29.70		165.38	73.50		768	735	$0.15	-33	4,900	1,400	40%
	2005	Summer	H	SH	A 168	Corn	Sha Nazy	Central area	25-Jun-05	7,000				15-Oct-05	66.66	35.71	21.43		286.91			21.43	30.00		141.43	62.86	14.29	666	579	$0.12	-88	4,821	1,321	38%
	2005	summer	H	SH	A 250	Corn	Synthetic	Nawa	1-Jul-05	10,000				26-Oct-05	100.00	27.00	35.00		255.60			42.66	28.36		162.00	72.00		723	720	$0.15	-3	4,800	1,300	37%
	2005	summer	H	NH	A 257	Corn	Synthetic	KaJaki	2-Jul-05	10,000				15-Nov-05	80.00	60.00	0.60	15.00	230.00				61.06		249.24	52.46		748	763	$0.16	15	4,770	1,270	36%
	2005	Summer	H	NH	A 219	Corn	Synthetic	Nawzad	18-Jun-05	8,000				12-Nov-05	80.00		57.00	15.00	250.00				60.95		179.30	48.28		691	762	$0.16	71	4,763	1,263	36%
	2005	Summer	H	SH	A 200	Corn	Synthetic	Nawa	9-Jun-05	10,000				30-Oct-05	100.00		70.00		264.00			63.00	29.02		159.48	70.88		756	709	$0.15	-48	4,725	1,225	35%
	2005	summer	K	KH	A 235	Corn	Synthetic	Zhari	8-Jun-05	4,000				1-Nov-05	50.00	100.00	140.00		325.00				50.00		221.80	88.70		976	657	$0.14	-318	4,695	245	6%
	2005	Summer	H	SH	A 169	Corn	Sha Nazy	Central area	26-Jun-05	7,000				17-Oct-05	66.66	35.71	21.43		190.29			20.86	30.00		137.83	61.26	14.29	564	563	$0.12	-1	4,693	1,193	34%
	2005	summer	H	SH	A 251	Corn	Synthetic	Nawa	1-Jul-05	10,000				1-Nov-05	100.00	27.00	35.00		255.60			41.32	27.68		156.94	69.76		713	698	$0.15	-16	4,650	1,150	33%
	2005	Summer	H	SH	A 210	Corn	Synthetic	Nawa	27-Jun-05	8,000				2-Oct-05	78.75	40.00	52.50	5.00	288.75			38.75	35.00		197.50	60.00		796	683	$0.15	-113	4,556	1,056	30%
	2005	Summer	H	SH	A 174	Corn	Synthetic	Central area	21-Jun-05	5,000				8-Oct-05	66.64	50.00	20.00		202.48			20.00	27.00		132.72	59.00	16.00	578	540	$0.12	-38	4,500	1,000	29%
	2005	Summer	H	SH	A 201	Corn	Synthetic	Nawa	3-Jun-05	10,000				25-Oct-05	100.00		70.00		264.00			60.00	27.00		151.88	67.50		740	675	$0.15	-65	4,500	1,000	29%
	2005	Summer	H	SH	A 209	Corn	Synthetic	Nawa	26-Jun-05	10,000				18-Oct-05	83.00	52.00	47.00	15.00	219.00			42.00	35.00		168.00	48.00		709	675	$0.15	-34	4,500	1,000	29%
	2005	Summer	H	NH	A 221	Corn	Synthetic	Sangin	28-Jun-05	8,000				15-Nov-05	80.00	50.00	60.00	15.00	277.03				54.00		217.30	45.75		799	675	$0.15	-124	4,500	1,000	29%
	2005	Summer	H	SH	A 167	Corn	Synthetic	Central area	23-Jun-05	7,000				19-Oct-05	66.66	35.71	21.43		205.06			19.94	28.57		132.40	58.83	14.29	569	538	$0.12	-30	4,487	987	28%
	2005	Summer	H	SH	A 171	Corn	Sha Nazy	Central area	28-Jun-05	8,000				18-Oct-05	58.33	31.25	25.00		180.55			19.83	27.00		131.68	58.50	15.00	532	535	$0.12	3	4,460	960	27%
	2005	Summer	H	NH	A 228	Corn	Synthetic	Musaqlla	27-Jun-05	10,000				20-Oct-05	80.00	80.00	60.00	15.00	216.70				54.72		262.84	55.34		825	727	$0.17	-98	4,275	775	22%
	2005	Summer	H	SH	A 172	Corn	Synthetic	Central area	28-Jun-05	7,000				16-Oct-05	66.66	50.00	21.43		194.14			18.29	23.63		122.31	54.37	14.29	551	494	$0.12	-57	4,114	614	18%
	2005	Summer	H	NH	A 220	Corn	Synthetic	Nawzad	14-Jun-05	10,000				15-Nov-05	64.00		45.60	12.00	210.00				52.22		212.04	44.70		641	653	$0.16	12	4,080	580	17%
	2005	Summer	H	NH	A 225	Corn	Synthetic	Musaqlla	21-Jun-05	10,000				28-Oct-05	80.00	60.00	60.00	15.00	224.50				51.90		239.70	50.46		782	649	$0.16	-133	4,055	555	16%
	2005	Summer	H	NH	A 227	Corn	Synthetic	Musaqlla	23-Jun-05	10,000				23-Oct-05	80.00		60.00	15.00	222.10				51.84		239.40	50.40		719	648	$0.16	-71	4,050	550	16%
	2005	Summer	H	SH	A 173	Corn	Synthetic	Central area	28-Jun-05	7,000				14-Oct-05	66.66	35.71	21.43		178.06			17.71	23.14		118.86	52.83	14.29	514	478	$0.12	-36	3,986	486	14%
	2005	summer	H	SH	A 246	Corn	Sarhad yellow	Nad-I-Ali	8-Jul-05	10,000				15-Nov-05	65.00	100.00	54.00	12.50	194.20			40.00			108.14	48.00		622	436	$0.11	-186	3,960	460	13%
	2005	Summer	H	SH	A 170	Corn	Sha Nazy	Central area	26-Jun-05	8,000				10-Oct-05	66.65	31.25	25.00		165.93			17.50	25.00		117.55	52.25	15.00	501	473	$0.12	-29	3,938	438	13%
	2005	summer	H	NH	A 258	Corn	Synthetic	KaJaki	3-Jul-05	8,000				20-Nov-05	80.00	60.00	60.00	15.00	275.00				50.40		205.78	43.33		790	630	$0.16	-160	3,938	438	13%
	2005	Summer	H	NH	A 230	Corn	Synthetic	Musaqlla	1-Jun-05	10,000				21-Oct-05	80.00		60.00	15.00	253.70				50.10		231.36	48.70		739	626	$0.16	-113	3,914	414	12%
	2005	Summer	H	SH	A 162	Corn	Sarhad Yellow	Nad-I-Ali	26-Jun-05	8,000				5-Nov-05	65.00	106.20	44.00	16.80	218.75			34.00	18.00		108.15	48.08		659	421	$0.11	-238	3,825	325	9%
	2005	Summer	H	NH	A 222	Corn	Synthetic	Musaqlla	28-Jun-05	10,000				20-Oct-05	80.00		60.00	15.00	222.10				49.14		222.20	46.78		695	614	$0.17	-$81	3,614	114	3%
	2005	Summer	H	NH	A 226	Corn	Synthetic	Musaqlla	22-Jun-05	10,000				30-Oct-05	80.00		60.00	15.00	224.50				46.08		212.80	44.80		683	576	$0.16	-107	3,600	100	3%
	2005	Summer	H	SH	A 161	Corn	Sarhad Yellow	Nad-I-Ali	20-Jun-05	6,000				2-Nov-05	65.00	70.00	40.00	15.50	270.80			31.00	15.00		97.50	43.33		648	383	$0.11	-265	3,485	-15	0%
	2005	summer	H	SH	A 245	Corn	synthetic	Central area	30-May-05	9,000				15-Oct-05	66.67	38.89	24.07		178.00			15.33	21.00		104.40	46.40	13.33	495	414	$0.12	-81	3,450	-50	-1%
	2005	Summer	H	SH	A 165	Corn	Synthetic	Central area	22-Jun-05	10,000				20-Oct-05	53.32	25.00	20.00		193.04			15.00	19.98		100.80	44.80		472	408	$0.12	-64	3,400	-100	-3%
	2005	summer	H	NH	A 261	Corn	Synthetic	Musaqlla	15-Jun-05	8,000				25-Oct-05	80.00		60.00	15.00	265.63				45.53		191.58	40.33		698	569	$0.18	-129	3,234	-266	-8%
	2005	summer	H	NH	A 259	Corn	Synthetic	Musaqlla	1-Jul-05	10,000				1-Nov-05	80.00		60.00	15.00	212.50				40.32		186.20	39.20		633	504	$0.16	-129	3,150	-350	-10%
	2005	Summer	H	NH	A 224	Corn	Synthetic	Musaqlla	25-Jun-05	10,000				25-Oct-05	80.00		60.00	15.00	219.70				37.04		171.12	36.02		619	463	$0.16	-156	2,895	-605	-17%
	2005	Summer	H	SH	A 163	Corn	Sarhad Yellow	Nad-I-Ali	27-Jun-05	7,000				9-Nov-05	55.71	40.29	49.97	17.14	162.00			25.71	11.43		81.66	36.29		480	316	$0.11	-164	2,871	-629	-18%
	2005	Summer	H	NH	A 229	Corn	Synthetic	Musaqlla	28-Jun-05	10,000				24-Oct-05	80.00		60.00	15.00	234.50				34.56		159.60	33.60		617	432	$0.16	-185	2,700	-800	-23%
	2005	Summer	H	SH	A 207	Corn	Synthetic	Nawa	24-Jun-05	10,000				20-Oct-05	83.00	52.00	47.00	15.00	219.00			42.00	35.00		168.00	48.00		709	405	$0.15	-304	2,700	-800	-23%
	2005	Summer	H	SH	A 166	Corn	Synthetic	Central area	24-Jun-05	10,000				12-Oct-05	70.00	50.00	20.00		174.10			11.00	14.84		186.74	35.00	14.00	562	300	$0.12	-262	2,500	-1,000	-29%
	2005	summer	H	NH	A 260	Corn	Synthetic	Musaqlla	6-Jun-05	10,000				28-Oct-05	80.00		60.00	15.00	231.70				27.92		128.98	27.16		571	349	$0.16	-222	2,182	-1,318	-38%
	2005	Summer	H	SH	A 178	Corn	Local	Marja	23-Jun-05	9,000				22-Nov-05	100.00	53.33	26.67	20.00	174.89				13.33		59.09	32.82		480	282	$0.13	-198	2,167	-1,333	-38%
	2005	Summer	H	SH	A 175	Corn	Local	Marja	20-Jun-05	10,000				15-Nov-05	90.00	48.00	24.00	18.00	184.80				12.00		55.22	30.68		463	269	$0.14	-194	1,890	-1,610	-46%
	2005	Summer	H	SH	A 176	Corn	Local	Marja	21-Jun-05	10,000				23-Nov-05	90.00	48.00	24.00	18.00	157.00				10.00		54.32	30.20		432	262	$0.14	-170	1,870	-1,630	-47%
	2005	summer	H	SH	A 249	Corn	Local	Marja	9-Jul-05	10,000				24-Nov-05	90.00	48.00	24.00	18.00	122.60				11.00		45.76	25.54		385	218	$0.13	-167	1,680	-1,820	-52%
	2005	Summer	H	SH	A 177	Corn	Local	Marja	22-Jun-05	9,000				21-Nov-05	88.89	53.33	26.67	20.00	186.00				10.00		43.20	24.00		452	202	$0.14	-250	1,444	-2,056	-59%

b. Cotton Report:

Introduction:

Cotton has been grown in Afghanistan and taken to local gins where it has been transformed into a natural fiber for use as pillows, mattresses, and quilts for many years. However many of the private gins have been destroyed resulting in a dramatic decrease in cotton production as there was nowhere to process the cotton, except the government run facility in Lashkar gah. The majority of cotton in Afghanistan is exported in large bales to outside countries where it is cleaned and processed. After which the processed cotton is re imported for local needs. Cotton plants require a great deal of heat, and are best grown during the summer. The optimal dates for sowing cotton is from mid April to mid May and the best time to harvest Cotton is between late September and early November.

Plot Description:

19 different cotton plots have been planted under the ALQIP program. All of the cotton plots are planted using the Acala seed varieties and all have a drip irrigation system installed. The Acala cotton variety was first tested at our CADG research farm in Helmand. 20 different varieties of crops have been tested in 2002. Acala has produced the highest yield of all twenty varieties tested, namely 4,238 kg per hectare. In 2003 33 varieties of cotton have been tested and again Acala has produced a high yield of 4,684 kg per hectare. We have established cotton demonstration plots all over the Helmand region, the districts include Nawa, Central, Nad-i-Ali, Nahrisaraj, Marja, and Garmseer. We have also established a table calculating the cost for best practices. These costs do not include the cost to maintain the drip irrigation system for the season.

Impact:

Yield and NETT Income:

All farmers growing cotton have received $0.28 per kg of yield. There is no difference in selling price for this crop as the industry is regulated by the government and only the government controlled gin is allowed to operate. None of the cotton plots are able to produce yields per hectare that are higher than the expected yield of 4,684 which has been produced on our research farm in Helmand. The sowing and harvest dates are consistent and many of the farmers are adopting our “best practices” and doing the necessary tasks such as sowing and harvesting at the optimal times. Some of the farmers such as plot A124 have harvested their crops too early resulting in low yields compared to the other crops. Subsistence farmers often do this to try and get in more crop cycles per year, not realizing the lost potential of their actions.

Crops that have produced the highest yields are in Nawa, Central, Nahrisaraj, Nad I Ali, while plots that have performed poorly are in Marja district, indicating that the farmers in Marja have not successfully adapted best practices in their farming compared to the farmers in all other districts. Below is a spread sheet that shows

the top one third percent of all our cotton demonstration plots. Through the use of best practices, new technologies such as drip irrigation systems, and constant monitoring from our CADG extension workers the average farmer can easily produce these high yields.

Plot Reference Number	District	Planted Area (Sq Meters)	Drip	Sowing Date	Harvest date	Yield (kg) per Hectare	Income (USD) per Hectare	Traditional Yield	Yield Increase per Hectare	NETT Income
A 128	Nawa	6,000	6,000	1-May-05	1-Oct-05	3,825	$1,071	2690	1,135	($24)

Impact:

Cost and Income.

More than half of the cotton plots this year have produced incomes that are higher than the costs to produce the income. 7 plots have produced NETT incomes of over $1,000 per hectare. The Farmers in Marja have spent little to nothing on controlling pests and diseases. Plot A 124 has spent a total of $15 per hectare, which is the most any of the farmers have spent. While under best practices farmers need to be spending around $50 on pest and disease control. Although the selling price for cotton in high compared to other crops due to the costs farmers are only able to make a maximum of $1,638 per hectare, while farmers are paying a maximum cost of 1,429.

Plot Reference Number	Plow/Leveling/Ridges Costs (USD) per Hectare	DAP Fertilizer (USD) Costs per Hectare	Fertilizer (UREA) Cost per Hectare	Seed Pricing (USD) per Hectare	Pesticides Cost (USD) per Hectare	Weeding Costs (USD) per Hectare	Thresher Costs (USD) per Hectare	Total Cost per Hectare	Total Income per Hectare
A 136	$111.00	$75.00	$51.00	$10.00	$10.00	$0.00	$0.00	$1,047	$1,260.
Traditional Yield	$80.89	$0.00	$47.57	$2.15	$3.30	$4.47	$5.26	$555.12	$753.20
Best Practices	$190.00	$120.00	$70.00	$10.00	$50.00	$225.00	$90.00	-	-

Above is a chart showing all the major costs for both the traditional crops and one of our demonstration plots which is the top 1/3rd average of all our plots. Through best practices cotton has produced an income that is 2x greater than the income of the traditional yield. However the cost as also doubled. While these new practices have increased the farmer's shares there is very little difference in the NETT income. Through the data that we have collected farmers are better of growing different types of crops unless new varieties can be introduces that will either raise the selling price or the yield.

Conclusion:

These new technologies and the training of "Best Practices" in establishing and maintaining crops have helped farmers to developing more effective ways in running their farms in order to establish higher incomes using less amounts of area.

This was the first year that farmers have grown this crop under drip irrigation. Once farmers have become more familiar with this crop under drip we expect them to produce higher yields in the future. Farmers in many of the Helmand districts have now seen the effectiveness of our best practices and have become more willing to implement best practices in their own plots of land. Our research farms are continuing to test new varieties in Helmand to improve farmer's NETT income. Our Extension workers are continuing to reinforce farmers past training on optimal sowing and harvesting dates and best practices. Our hopes are that though the introduction of new varieties and training, farmers can continue to become more successful in growing cotton.

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ALQIP Cotton Yield Data

CADG Development Group

		Planted Area (Sq Metres)	Drip (Sq. Metres)	Trellis (Sq. Metres)	Under Plastic (Sq. metres)	None (Sq.Metres)
Selected Demonstration Plots	**Sq Metres**	**166,000**	**166,000**	**-**	**-**	**-**
	Hectares	**16.60**	**16.60**	**-**	**-**	**-**
	Jeribs	**83**	**83**	**-**	**-**	**-**
	No of Plots	**21**	**21**	**-**	**-**	**-**
Total Demonstration Plots	**Sq Metres**	**1,519,900**	**1,428,800**	**193,800**	**-**	**81,100**
	Hectares	**151.99**	**142.88**	**19.38**	**-**	**8.11**
	Jeribs	**760**	**714**	**97**	**-**	**41**
	No of Plots	**261**	**188**	**24**	**-**	**72**

	Total Cost per Hectare	Income (USD per Hectare)	Price (USD per Kg)	**NET Income (USD) per Hectare**	Traditional Yield (Kg per Hectare)	Yield (Kg per Hectare)	Increase/Decrease in Yield per Hectare	Percentage Increase/Decrease in Yield per Hectare
Avg / Ha	**$836**	**$679**	**$0.28**	**-$66**	**2,690 kg**	**2,425 kg**	**-265 kg**	**-10%**
Avg / Jerib	**$167**	**$136**	**$0.00**	**-$13**	**538 kg**	**485 kg**	**-53 kg**	**0%**
Maximum	**$1,429**	**$1,165**	**$0.29**	**$233**	**2,690 kg**	**4,161 kg**	**1,471 kg**	**55%**
75% of Max	**$1,132**	**$922**	**$0.29**	**$83**	**2,690 kg**	**3,293 kg**	**603 kg**	**22%**
Nr Plots	**21**	**20**	**20**	**21**	**21**	**20**	**20**	**20**

Intercrop (Yes/No)	Year	Season (Winter, Summer or Perennial)	Office	Province	Ref Number (1per plot, same for intercrop)	Crop	Variety	District	Sowing Date	Drip (Sq. Metres)	Trellis (Sq. Metres)	Under Plastic (Sq. metres)	None (Sq.Metres)	Harvest date	Yield (Total Kg) per Plot	Price per Kg (Afs)	Total Cost per Hectare	Income (USD per Hectare)	Selling Price (USD per Kg)	NET Income (USD) per Hectare	Traditional Yield (Kg per Hectare)	Yield (Kg per Hectare)	Increase/Decrease in Yield per Hectare	Percentage Increase/Decrease in Yield per Hectare
	2005	Peren	H	SH	A 152	Cotton	Acala DP 6206	Central area	28-May-05	9,000					0		$0			$0	2,690			
	2005	Summ	H	SH	A 189	Cotton	Acala DP 6204	Nahrisaraj	11-Jun-05	7,000				22-Nov-05	2,913	14.0	$943	$1,165	$0.28	$222	2,690	4,161	1,471	55%
	2005	Peren	H	SH	A 155	Cotton	Acala DP 6206	Nahrisaraj	29-May-05	7,000				2-Nov-05	2,835	14.0	$938	$1,134	$0.28	$196	2,690	4,050	1,360	51%
	2005	Summ	H	SH	A 128	Cotton	Acala DP 6204	Nawa	1-May-05	6,000				1-Oct-05	2,295	14.0	$1,096	$1,071	$0.28	-$25	2,690	3,825	1,135	42%
	2005	Summ	H	SH	A 126	Cotton	Acala DP 6204	Nad-I-Ali	29-Apr-05	6,000				4-Sep-05	2,106	14.0	$1,429	$983	$0.28	-$446	2,690	3,510	820	30%
	2005	Peren	H	SH	A 148	Cotton	Acala DP 6205	Nahrisaraj	26-May-05	7,000				19-Oct-05	2,401	14.6	$904	$1,002	$0.29	$98	2,690	3,430	740	28%
	2005	Summ	H	SH	A 131	Cotton	Acala DP 6204	Nahrisaraj	5-May-05	8,000				25-Oct-05	2,700	14.0	$932	$945	$0.28	$13	2,690	3,375	685	25%
	2005	Peren	H	SH	A 141	Cotton	Acala DP 6204	Nahrisaraj	18-May-05	7,000				3-Nov-05	2,341	14.0	$775	$936	$0.28	$162	2,690	3,344	654	24%
	2005	Peren	H	SH	A 140	Cotton	Acala DP 6204	Garmsir	18-May-05	8,000				15-Oct-05	2,633	14.0	$853	$922	$0.28	$69	2,690	3,291	601	22%
	2005	Summ	H	SH	A 130	Cotton	Acala DP 6204	Central area	5-May-05	4,000				16-Sep-05	1,200	14.0	$935	$840	$0.28	-$94	2,690	3,000	310	12%
	2005	Summ	H	SH	A 132	Cotton	Acala DP 6205	Central area	9-May-05	6,000				9-Oct-05	1,500	14.0	$836	$700	$0.28	-$136	2,690	2,500	-190	-7%
	2005	Peren	H	SH	A 138	Cotton	Acala DP 6204	Central area	16-May-05	10,000				26-Sep-05	2,350	14.0	$425	$658	$0.28	$233	2,690	2,350	-340	-13%
	2005	Peren	H	SH	A 137	Cotton	Acala DP 6208	Nawa	15-May-05	10,000				5-Oct-05	2,250	14.0	$991	$630	$0.28	-$361	2,690	2,250	-440	-16%
	2005	Summ	H	SH	A 133	Cotton	Acala DP 6206	Central area	12-May-05	9,000				28-Oct-05	2,000	14.0	$689	$622	$0.28	-$66	2,690	2,222	-468	-17%
	2005	Peren	H	SH	A 144	Cotton	Acala DP 6205	Central area	25-May-05	9,000				24-Sep-05	1,850	14.0	$660	$576	$0.28	-$84	2,690	2,056	-634	-24%
	2005	Summ	H	SH	A 136	Cotton	Acala DP 6204	Nawa	15-May-05	9,000				10-Oct-05	1,823	14.0	$1,047	$567	$0.28	-$480	2,690	2,026	-664	-25%
	2005	Peren	H	SH	A 150	Cotton	Acala DP 6205	Marja	27-May-05	10,000				14-Nov-05	1,700	14.0	$661	$476	$0.28	-$185	2,690	1,700	-990	-37%
	2005	Summ	H	SH	A 124	Cotton	Acala DP 6205	Nad-I-Ali	15-Apr-05	6,000				4-Sep-05	960	14.0	$418	$448	$0.28	$30	2,690	1,600	-1,090	-41%
	2005	Peren	H	SH	A 147	Cotton	Acala DP 6204	Marja	26-May-05	10,000				18-Nov-05	1,600	14.0	$636	$448	$0.28	-$188	2,690	1,600	-1,090	-41%
	2005	Peren	H	SH	A 154	Cotton	Acala DP 6207	Marja	28-May-05	10,000				20-Nov-05	1,575	14.0	$639	$441	$0.28	-$198	2,690	1,575	-1,115	-41%
	2005	Peren	H	SH	A 153	Cotton	Acala DP 6206	Marja	28-May-05	8,000				15-Nov-05	1,200	14.0	$636	$420	$0.28	-$216	2,690	1,500	-1,190	-44%

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ALQIP Cotton Cost Data

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		Planted Area (Sq Metres)	Drip (Sq. Metres)	Trellis (Sq. Metres)	Under Plastic (Sq. metres)	None (Sq.Metres)
Selected Demonstration Plots	Sq Metres	166,000	166,000	-	-	-
	Hectares	16.60	16.60	-	-	-
	Jeribs	83	83	-	-	-
	No of Plots	21	21	-	-	-
Total Demonstration Plots	Sq Metres	1,519,900	1,428,800	193,800	-	81,100
	Hectares	151.99	142.88	19.38	-	8.11
	Jeribs	760	714	97	-	41
	No of Plots	261	188	24	-	72

	Plow/Leveling/Ridges Costs (USD) per Hectare	DAP Fertilizer (USD) Costs per Hectare	Fertilizer (UREA) Cost per Hectare	Seed Pricing (USD) per Hectare	Irrigation Costs (USD) per Hectare	Pesticides Cost (USD) per Hectare	Weeding Costs (USD) per Hectare	Transportation Costs (USD) per Hectare	Thresher Costs (USD) per Hectare	Sowing/Havesting Costs (USD) per Hectare	Farmer Share (USD) per Hectare	Mulla Share (USD) per Hectare	Other Cost (USD) per Hectare	Total Cost per Hectare	Income (USD per Hectare)	Price (USD per Kg)	NET Income (USD) per Hectare	Yield (Kg per Hectare)	Increase/Decrease in Yield per Hectare	Percentage Increase/Decrease in Yield per Hectare
Avg / Ha	$80.00	$56.29	$41.96	$6.63	$246.16	$7.14	$20.00	$16.00	$100.00	$105.08	$219.20	$92.03	$24.00	$836	$679	$0.28	-$66.49	2,425 kg	-265 kg	-10%
Avg / Jerib	$16.00	$11.26	$8.39	$1.33	$49.23	$1.43	$4.00	$3.20	$20.00	$21.02	$43.84	$18.41	$4.80	$167	$136	$0.00	-$13.30	485 kg	-53 kg	
Maximum	$111	$189	$80	$9.60	$440	$15	$25	$80	$100	$156	$380	$169	$160	$1,429	$1,165	$0.29	$233	4,161 kg	1,471 kg	55%
75% of Max	$96	$123	$61	$8.11	$343	$11	$23	$48	$100	$131	$300	$130	$92	$1,132	$922	$0.29	$83	3,293 kg	603 kg	22%
Nr Plots	20	20	20	6	20	9	4	15	1	12	20	20	8	21	20	20	21	20	20	20

Intercrop (Yes/No)	Year	Season (Winter or Summer)	Office	Province	Ref Number (1per plot, same for intercrop)	Crop	Variety	District	Sowing Date	Drip (Sq. Metres)	Trellis (Sq. Metres)	Under Plastic (Sq. metres)	None (Sq.Metres)	Harvest date	Plow/Leveling/Ridges Costs (USD) per Hectare	DAP Fertilizer (USD) Costs per Hectare	Fertilizer (UREA) Cost per Hectare	Seed Pricing (USD) per Hectare	Irrigation Costs (USD) per Hectare	Pesticides Cost (USD) per Hectare	Weeding Costs (USD) per Hectare	Transportation Costs (USD) per Hectare	Thresher Costs (USD) per Hectare	Sowing/Havesting Costs (USD) per Hectare	Farmer Share (USD) per Hectare	Mulla Share (USD) per Hectare	Other Cost (USD) per Hectare	Total Cost per Hectare	Income (USD per Hectare)	Selling Price (USD per Kg)	NET Income (USD) per Hectare	Yield (Kg per Hectare)	Increase/Decrease in Yield per Hectare	Percentage Increase/Decrease in Yield per Hectare
	2005	Perennial	H	SH	A 152	Cotton	Acala DP 6206	Central area	28-May-05	9,000																		0			0			
	2005	Summer	H	SH	A 189	Cotton	Acala DP 6204	Nahrisaraj	11-Jun-05	7,000				22-Nov-05	80	65	70	9	186	7		23		92	285	127		943	1,165	0	222	4,161	1,471	55%
	2005	Perennial	H	SH	A 155	Cotton	Acala DP 6206	Nahrisaraj	29-May-05	7,000				2-Nov-05	80	80	60		236				100		265	118		938	1,134	0	196	4,050	1,360	51%
	2005	Summer	H	SH	A 128	Cotton	Acala DP 6204	Nawa	1-May-05	6,000				1-Oct-05	100	70	70		440			68			241	107	136	1,096	1,071	0	-25	3,825	1,135	42%
	2005	Summer	H	SH	A 126	Cotton	Acala DP 6204	Nad-I-Ali	29-Apr-05	6,000				4-Sep-05	106	189	80	5	257	10		78		156	380	169		1,429	983	0	-446	3,510	820	30%
	2005	Perennial	H	SH	A 148	Cotton	Acala DP 6205	Nahrisaraj	26-May-05	7,000				19-Oct-05	69	54	51	10	377	9					232	103		904	1,002	0	98	3,430	740	28%
	2005	Summer	H	SH	A 131	Cotton	Acala DP 6204	Nahrisaraj	5-May-05	8,000				25-Oct-05	80	70	65	7	378						230	102		932	945	0	13	3,375	685	25%
	2005	Perennial	H	SH	A 141	Cotton	Acala DP 6204	Nahrisaraj	18-May-05	7,000				3-Nov-05	80	40	60		279						218	97		775	936	0	162	3,344	654	24%
	2005	Perennial	H	SH	A 140	Cotton	Acala DP 6204	Garmsir	18-May-05	8,000				15-Oct-05	70	31	70	6	358						219	97		853	922	0	69	3,291	601	22%
	2005	Summer	H	SH	A 130	Cotton	Acala DP 6204	Central area	5-May-05	4,000				16-Sep-05	67	58	27		281	8		13		133	261	87	24	935	840	0	-94	3,000	310	12%
	2005	Summer	H	SH	A 132	Cotton	Acala DP 6205	Central area	9-May-05	6,000				9-Oct-05	67	58	33		259	7		11		110	219	73	24	836	700	0	-136	2,500	-190	-7%
	2005	Perennial	H	SH	A 138	Cotton	Acala DP 6204	Central area	16-May-05	10,000				26-Sep-05	7	4	7		18	1		10		104	206	69	24	425	658	0	233	2,350	-340	-13%
	2005	Perennial	H	SH	A 137	Cotton	Acala DP 6208	Nawa	15-May-05	10,000				5-Oct-05	100	68	70		264			80			284	126	160	991	630	0	-361	2,250	-440	-16%
	2005	Summer	H	SH	A 133	Cotton	Acala DP 6206	Central area	12-May-05	9,000				28-Oct-05	67	39	24		191	3		9		94	196	65	24	689	622	0	-66	2,222	-468	-17%
	2005	Perennial	H	SH	A 144	Cotton	Acala DP 6205	Central area	25-May-05	9,000				24-Sep-05	67	39	24		185	4		9		90	182	61	24	660	576	0	-84	2,056	-634	-24%
	2005	Summer	H	SH	A 136	Cotton	Acala DP 6204	Nawa	15-May-05	9,000				10-Oct-05	111	75	78		293			80			284	126	160	1,047	567	0	-480	2,026	-664	-25%
	2005	Perennial	H	SH	A 150	Cotton	Acala DP 6205	Marja	27-May-05	10,000				14-Nov-05	90	48	24		196		20	18		113	98	54		661	476	0	-185	1,700	-990	-37%
	2005	Summer	H	SH	A 124	Cotton	Acala DP 6205	Nad-I-Ali	15-Apr-05	6,000				4-Sep-05	$35	$47	$20	$4	$89	$15		$14		$36	$110	$49		$418	$448	$0	$30	1,600	-1,090	-41%
	2005	Perennial	H	SH	A 147	Cotton	Acala DP 6204	Marja	26-May-05	10,000				18-Nov-05	90	48	24		188		20	16		107	92	51		636	448	0	-188	1,600	-1,090	-41%
	2005	Perennial	H	SH	A 154	Cotton	Acala DP 6207	Marja	28-May-05	10,000				20-Nov-05	90	48	24		180		20	18		118	91	50		639	441	0	-198	1,575	-1,115	-41%
	2005	Perennial	H	SH	A 153	Cotton	Acala DP 6206	Marja	28-May-05	8,000				15-Nov-05	90	60	30		197		25	15		85	86	48		636	420	0	-216	1,500	-1,190	-44%

RAMP Rebuilding Agricultural Markets Program Afghanistan

Central Asia development group

c. Egg plant Report:

Introduction:

Egg plant is a great source of fiber, potassium and vitamins A and C. Egg plants can be grown in both the summer and winter seasons in Afghanistan, but they have a low tolerance for frost and must be protected during frost periods by using plastic tunnels, or covered with plastic sheets. Egg plants are first planted in seedling nurseries in February then after 2 months they are transplanted and placed into regular demonstration plots. The optimal time for transplanting eggplant is in April, and the best time to harvest egg plant is in July. Plastic tunnels and drip irrigation systems are hugely beneficial to egg plant crops as they also work to protect the crops from frost, weeds, and diseases.

Plot Description:

Two plots of Egg Plant have been sown and harvested under the ALQIP program each a different variety. Plot A 36 is grown in North Helmand province and plot A 82 is grown in Kandahar province. Both plots have been grown without the aid of a drip irrigation system or under plastic tunnels. In 2002 four different types of egg plant have been tested, Black beauty, Florida Market, and Ichiban. The average yield out of all varieties is 28,544 kg per hectare.

Farmers can earn around $0.10 of kg of Eggplant, which is low compared to crops such as sunflower and peanut. Due to the high yields that farmers can produce from Egg Plant, it still remains a profitable crop when compared to corn, white cumin, or cotton.

Impact:

Yield and NETT Income:

Long Slim variety has produced a yield per hectare far higher than the Black Beauty variety egg plant. Both varieties produced yields per hectare that are higher than the traditional yields for local eggplant varieties. Our best practices have had a huge impact on both varieties. Plot A 36 has produced a yield that is 40% higher (had the farmer started harvesting earlier he would have increased his yield) than the traditional yield and plot A 82 has produced a yield that is 55%

higher than the traditional yield. These increases are achieved by making small changes in the way the farmer plants and cares for his crop. Below is a spread sheet showing detailed information on both egg plant demonstration plots. Plot A 82 has produced a NETT income of 1,876, which is far higher than any of the other crops that we have discussed so far in this report. Below is a Chart that itemizes the major costs and NETT Income of both the traditional yields for both varieties and the costs for both of the plots.

Plot Reference Number	District	Planted Area (Sq Meters)	Drip	Sowing Date	Harvest date	Traditional Yield	Yield (kg) per Hectare	Yield Increase per Hectare	NETT Income
A 36	Maiwand	1000	-	12-Apr-05	2-Oct-05	10,000	13,950	3,950	$889
A 82	Musaqulla	1,000	-	9-Apr-05	20-Jun-05	25,000	38,760	13,760	$1,876

Income and Costs:

The costs for each plot include the farmer's shares and the mullah's as well as all the other costs to maintain the plot and represent the total cost on a US$ per hectare basis. The large differences in yield have resulted in large differences in the income per hectare that the two different varieties established. The farmer that established plot A 82 has spent $160 on weeding, while A 36 did not spend any money. The farmer of plot A 36 has not used DAP fertilizer, or has reported spending any amount of money on plowing. The average costs have been used to predict the traditional yield and certain costs such as DAP fertilizer have been taken out of the total cost due to the fact that DAP fertilizer has been introduced to the farmers by CADG as part of our best practices.

Ref Number (1per plot, same for intercrop)	Plow Leveling Ridges Costs (USD) per Hectare	DAP Fertilizer (USD) Costs per Hectare	Fertilizer (UREA) Cost per Hectare	Seed Pricing (USD) per Hectare	Weeding Costs (USD) per Hectare	Farmer Share (USD) per Hectare	Mullah Share (USD) per Hectare	Total Cost per Hectare	Total Income
A 36	$0.00	$0.00	$77.00	$80.00	$0.00	$279.00	$69.60	$506	$1395
Traditional	$0.00	$0.00	$77.00	$0.00	$0.00	$333.33	$100.00	$510	$1000
A 82	$90.00	$128.00	$56.00	$16.00	$160.00	$1,162.80	$387.60	$2,000	$3,876
Traditional	$90.00	$0.00	$56.00	$16.00	$0.00	$833.33	$250.00	$1,245	$2,500

Conclusion

Just like the corn crops eggplant is another example of how great an effect different varieties of a crop can have on the amount of yield the crop produces. Unlike the corn crop farmers are selling both varieties for the same price. There is a great necessity to continue to conduct research on different varieties of crops to see how effective they are in Afghanistan.

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ALQIP Egg Plant Yield Data

CADG Development Group

		Planted Area (Sq Metres)	Drip (Sq. Metres)	Trellis (Sq. Metres)	Under Plastic (Sq. metres)	None (Sq.Metres)
Selected Demonstration Plots	**Sq Metres**	**2,167**	**167**	**-**	**-**	**2,000**
	Hectares	**0.22**	**0.02**	**-**	**-**	**0.20**
	Jeribs	**1**	**0**	**-**	**-**	**1**
	No of Plots	**3**	**1**	**-**	**-**	**2**
Total Demonstration Plots	**Sq Metres**	**1,519,900**	**1,428,800**	**193,800**	**-**	**81,100**
	Hectares	**151.99**	**142.88**	**19.38**	**-**	**8.11**
	Jeribs	**760**	**714**	**97**	**-**	**41**
	No of Plots	**261**	**188**	**24**	**-**	**72**

	Total Cost per Hectare	Income (USD per Hectare)	Price (USD per Kg)	NET Income (USD) per Hectare	Traditional Yield (Kg per Hectare)	Yield (Kg per Hectare)	Increase/Decrease in Yield per Hectare	Percentage Increase/Decrease in Yield per Hectare
Avg / Ha	**$506**	**$2,636**	**$0.10**	**$889**	**25,000 kg**	**26,355 kg**	**8,855 kg**	**47%**
Avg / Jerib	**$101**	**$527**	**$0.00**	**$178**	**5,000 kg**	**5,271 kg**	**1,771 kg**	**0%**
Maximum	**$2,000**	**$3,876**	**$0.10**	**$1,876**	**25,000 kg**	**38,760 kg**	**13,760 kg**	**55%**
75% of Max	**$1,253**	**$3,256**	**$0.10**	**$1,383**	**25,000 kg**	**32,558 kg**	**11,308 kg**	**51%**
Nr Plots	**3**	**2**	**2**	**3**	**3**	**2**	**2**	**2**

Ref Number (1per plot, same for intercrop)	Crop	Variety	District	Sowing Date	Drip (Sq. Metres)	Trellis (Sq. Metres)	Under Plastic (Sq. metres)	None (Sq.Metres)	Harvest date	Yield (Total Kg) per Plot	Price per Kg (Afs)	Total Cost per Hectare	Income (USD per Hectare)	Selling Price (USD per Kg)	NET Income (USD) per Hectare	Traditional Yield (Kg per Hectare)	Yield (Kg per Hectare)	Increase/Decrease in Yield per Hectare	Percentage Increase/Decrease in Yield per Hectare
A 36	Eggplant	Black beauty	Maiwand	12-Apr-05				1,000	2-Oct-05	1,395	5.0	$506	$1,395	$0.10	$889	10,000	13,950	3,950	40%
A 60	Eggplant	Local	Khakriz	10-Apr-04	167					0		$0			$0	25,000			
A 82	Eggplant	Long Slim 920	Musaqlla	9-Apr-05				1,000	20-Jun-05	3,876	5.0	$2,000	$3,876	$0.10	$1,876	25,000	38,760	13,760	55%

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		Raised Bed (Sq Metres)	Drip (Sq Metres)	Trellis (Sq Metres)	Under Plastic (Sq metres)	None (Sq Metres)		Plow, Leveling & Ridges Costs (LED) per Hectare	DAP Fertilizer (LED) Costs per Hectare	Fertilizer (LED) Cost per Hectare	Seed Pricing (LED) per Hectare	Irrigation Costs (LED) per Hectare	Pesticides Cost (LED) per Hectare	Weeding Costs (LED) per Hectare	Transportation Costs (LED) per Hectare	Thresher Costs (LED) per Hectare	Sowing & Harvesting Costs (LED) per Hectare	Farmer Share (LED) per Hectare	Mills Share (LED) per Hectare	Other Cost (LED) per Hectare	Total Cost per Hectare	Income (LED) per Hectare	Price (LED) per Kg	NET Income (LED) per Hectare	Yield (Kg) per Hectare	Increase/Decrease in Yield per Hectare	Percentage Increase/Decrease in Yield per Hectare
Selected Demonstration Plots	**Sq Metres**	2,167	167	-	-	2,000																				
	Hectares	0.22	0.02	-	-	0.20	**Avg / Ha**			**$56.00**	**$16.00**							**$279.00**	**$69.60**		**$506**	**$2,636**	**$0.10**	**$889.40**	**26,355 kg**	**8,855 kg**	**47%**
	Jeribs	1	0	-	-	1	**Avg / Jerib**			**$11.20**	**$3.20**							**$55.80**	**$13.92**		**$101**	**$527**		**$177.88**	**5,271 kg**	**1,771 kg**	
							Maximum	**$90**	**$128**	**$77**	**$80.00**			**$160**				**$1,163**	**$388**	**$388**	**$2,000**	**$3,876**	**$0.10**	**$1,876**	**38,760 kg**	**13,760 kg**	**55%**
							75% of Max	**$45**	**$64**	**$67**	**$48.00**			**$80**				**$721**	**$229**	**$194**	**$1,253**	**$3,256**	**$0.10**	**$1,383**	**32,558 kg**	**11,308 kg**	**51%**
	No of Plots	3	1	-	-	2	**Nr Plots**	3	3	3	3	2	2	3	2	2	2	3	3	3	3	2	2	3	2	2	2
Total Demonstration Plots	**Sq Metres**	1,519,900	1,428,800	193,800	-	81,100																				
	Hectares	151.99	142.88	19.38	-	8.11																				
	Jeribs	760	714	97	-	41																				
	No of Plots	261	188	24	-	72																				

Plot Number (3 plots same for 1 farmer)	Crop	Variety	District	Sowing Date	Drip (Sq Metres)	Trellis (Sq Metres)	Under Plastic (Sq metres)	None (Sq Metres)	Harvest date	Plow, Leveling & Ridges Costs (LED) per Hectare	DAP Fertilizer (LED) Costs per Hectare	Fertilizer (LED) Cost per Hectare	Seed Pricing (LED) per Hectare	Irrigation Costs (LED) per Hectare	Pesticides Cost (LED) per Hectare	Weeding Costs (LED) per Hectare	Transportation Costs (LED) per Hectare	Thresher Costs (LED) per Hectare	Sowing & Harvesting Costs (LED) per Hectare	Farmer Share (LED) per Hectare	Mills Share (LED) per Hectare	Other Cost (LED) per Hectare	Total Cost per Hectare	Income (LED) per Hectare	Selling Price (LED) per Kg	NET Income (LED) per Hectare	Yield (Kg) per Hectare	Increase/Decrease in Yield per Hectare	Percentage Increase/Decrease in Yield per Hectare
A 36	Eggplant	Black beauty	Maiwand	12-Apr-05				1,000	2-Oct-05			77.00	80.00							279.00	69.60		506	1,395	$0.10	$889	13,950	3,950	40%
A 60	Eggplant	Local	Khakriz	10-Apr-04	167																							
A 82	Eggplant	Long Slim 920	Musaqlla	9-Apr-05				1,000	20-Jun-05	90.00	128.00	56.00	16.00			160.00				1,162.80	387.60	387.60	2,000	3,876	$0.10	1,876	38,760	13,760	55%

		Raised Bed (Sq Metres)	Drip (Sq Metres)	Trellis (Sq Metres)	Under Plastic (Sq metres)	None (Sq Metres)		Plow, Leveling & Ridges Costs (LED) per Hectare	DAP Fertilizer (LED) Costs per Hectare	Fertilizer (LED) Cost per Hectare	Seed Pricing (LED) per Hectare	Irrigation Costs (LED) per Hectare	Pesticides Cost (LED) per Hectare	Weeding Costs (LED) per Hectare	Transportation Costs (LED) per Hectare	Thresher Costs (LED) per Hectare	Sowing & Harvesting Costs (LED) per Hectare	Farmer Share (LED) per Hectare	Mills Share (LED) per Hectare	Other Cost (LED) per Hectare	Total Cost per Hectare	Income (LED) per Hectare	Price (LED) per Kg	NET Income (LED) per Hectare	Yield (Kg) per Hectare	Increase/Decrease in Yield per Hectare	Percentage Increase/Decrease in Yield per Hectare
Selected Demonstration Plots	**Sq Metres**	2,167	167	-	-	2,000																				
	Hectares	0.22	0.02	-	-	0.20	**Avg / Ha**			**$56.00**	**$16.00**							**$279.00**	**$69.60**		**$506**	**$2,636**	**$0.10**	**$889.40**	**26,355 kg**	**8,855 kg**	**47%**
	Jeribs	1	0	-	-	1	**Avg / Jerib**			**$11.20**	**$3.20**							**$55.80**	**$13.92**		**$101**	**$527**		**$177.88**	**5,271 kg**	**1,771 kg**	
							Maximum	**$90**	**$128**	**$77**	**$80.00**			**$160**				**$1,163**	**$388**	**$388**	**$2,000**	**$3,876**	**$0.10**	**$1,876**	**38,760 kg**	**13,760 kg**	**55%**
							75% of Max	**$45**	**$64**	**$67**	**$48.00**			**$80**				**$721**	**$229**	**$194**	**$1,253**	**$3,256**	**$0.10**	**$1,383**	**32,558 kg**	**11,308 kg**	**51%**
	No of Plots	3	1	-	-	2	**Nr Plots**	3	3	3	3	2	2	3	2	2	2	3	3	3	3	2	2	3	2	2	2
Total Demonstration Plots	**Sq Metres**	1,519,900	1,428,800	193,800	-	81,100																				
	Hectares	151.99	142.88	19.38	-	8.11																				
	Jeribs	760	714	97	-	41																				
	No of Plots	261	188	24	-	72																				

d. Fruit Tree Orchards and Micro Nurseries:

Plot Description:

CADG established 27 different orchard plots under the ALQIP program consisting of plum, pomegranate, fig, apricot and prune trees. All of these trees have been placed under drip irrigation; however they are too young to produce any yield and will require 2 more years before the first fruit is harvested.

With proper care farmers can cash in on a long term investment of this crop that will produce a yield year after year without having to spend all the time establishing a new plot at the start of every growing season. These trees have been gown from pips in nurseries on CADG research farms for two years and before being distributed to local farmers. These fruit trees are expected to produce fruit next year(2007) 3 years after establishing the orchard and 5 years after first establishing a seedling nursery.

39 micro nursery plots of stone fruit, apricot, plum and prune seedlings and pomegranate cuttings have been established from where they will grow and develop until they are ready to be distributed to local farmers. Once these saplings become 2 years old they are ready to be transplanted into orchards where they will further develop it fruit bearing trees.

Best Practices:

Orchards require a high initial capital investment to establish will not produce fruit for the first three years. It cost around $512 per hectare to both irrigate and maintain the orchards. When Orchard trees are young farmers have the ability to manipulate a tree so that it grows the way that they want it. By pruning (cutting away) certain parts of the tree and leaving selected branches the trees will be much smaller and more manageable and able to produce yield much earlier allowing farmers to pick fruit from all sections of the tree without having to climb the tree. Farmers can also plant trees closer together resulting in more trees in a given area of space. In order to ensure the success of a tree they need to be grafted, budded, irrigated, and pruned. Pests can also be deadly to young saplings if not attended to. When these trees mature and start bearing fruit they still need to be maintained with annual pruning and pest

control. This is a concept that farmers are having a hard time grasping, as many farmers do not understand how pruning can be beneficial to the tree.

Conclusion:

Orchards are going to be critical to the long term stability of the area, not just for the farmer's income but for the environment as well. It will take up to 5 years for them to reach full production and probably 7 to 8 years to breakeven on the investment, provided that the farmers follow recommended best practices.

Well established orchards will also reduce the likely-hood that farmers will plant any poppy on these lands, but it is a long-term process and also requires higher density plantings than is currently the norm.

Helmand and Kandahar were once tree rich provinces, but due to the ravages of the war years these were decimated. Work here however is slow and it would take a great deal of time before any noticeable improvement would occur and environmental changes take place.

e. Grape Report:

Introduction:

Growing grape vines is a long term investment and traditionally it takes between 4 to 5 years to produce the first harvest, and only in the 6th year will the vineyard reach full production. The time it takes to produce the first harvest can be shortened however if the vines are properly pruned and trained. With modern trellising and correct pruning and training of the vines the first harvest can be expected in the third year after planting. The first harvest will produce low yields due to the grape vine not being fully mature it will begin to produce its prime yield. By year 5 the vine should be in full production and the investment should break even in the 7th or 8th season. In order to produce high yields grape crops require trellis systems to support the vines, and a drip irrigation system, however many Afghan farmers are still using mud walls which makes harvesting and maintaining the plant much more difficult.

Plot Description:

24 different grape plots have been established under the ALQIP program. Due to time constraints and the unavailability of rooted cuttings all vineyards were established with fresh cuttings. This means that the vine takes some time to first establish its roots before being able to really grow above ground and fill the trellis

wire. This will mean that in most cases these demonstration plots will not achieve their first harvest in the 3rd year after planting, but the 4th.

In some cases where farmers had access to a few rooted cuttings from cutting nurseries established in 2004 the difference in growth can be clearly seen with the rooted cuttings being much more advanced by the end of the growing season.

In order to set up a trellis system farmers will need to spend $2500 per hectare for a concrete pole and wire trellis system. The trellis system will last for many seasons before it needs to be replaced. A farmer will also have to pay a capital cost of $3000 for a drip irrigation system that is capable of irrigating 1 hectare. Establishment costs are therefore in the order of $5500 to $6000 per hectare, especially if the farmer has to buy rooted cuttings from another farmer.

Annual running costs for the maintenance of the vineyard will require another $1,000-$2,000. On average it costs $270 per hectare to maintain (fuel and maintenance) a drip irrigation system. The farmer will also need to pay for labor, fertilizer, weeding and pesticides. The initial establishment cost of a vineyard is high, but the annual running costs will be much lower and provide a constant stream of income annually, as well as ensuring good land-use.

Many farmers do not have the financial means to establish a grape vineyard, or are unwilling to take the risk of setting up a vineyard until they see the results of having a grape vineyard. CADG has established demonstration plots in both the Kandahar and Helmand provinces so that farmers can see the results of implementing a grape vineyard. Farmers that have been willing to set aside such large areas of their land to establish vineyards have been rewarded with the full establishment and certain running costs.

The process of training and pruning grape vines is complex and farmers are still having trouble applying the correct techniques at the right times. Our extension workers are continuing to visit farmers who have established grape vines to educate them on the best practices for grapes.

Conclusion:

Extension workers have been paying close attention to farmers who have decided to establish grape vineyards this year do to the complexity of growing grape vines. Many lectures and field days have been scheduled by CADG to teach the extension worker correct pruning and training methods to strengthen their knowledge. Continual training will be given to the farmers in the following years to continually reinforce best practices.

ALQIP Grape Demonstration Plots established (2005)						
Plot Reference Number	District	Variety	Planted Area (Sq Meters)	Drip (Sq. Meters)	Trellis (Sq. Meters)	Sowing Date
A 7	Panjwai	Toran, Aita	8000	8000	8000	19-Feb-05
A 17	Arghandab	Toran	8000	8000	8000	26-Feb-05
A 24	Zhari	Aita	8000	8000	8000	15-Mar-05
A 28	Maiwand	Toran	8000	8000	8000	25-Feb-05
A 29	Maiwand	Toran	2000	2000	2000	17-Mar-05
A 30	Maiwand	Toran	2000	2000	2000	17-Mar-05
A 31	Maiwand	Toran	2000	2000	2000	17-Mar-05
A 43	Daman	Shundokhani	4800	4800	4800	27-Feb-05
A 45	Khakriz	Toran	10000	10000	10000	20-Feb-05
A 46	Khakriz	Toran	16000	10000	10000	25-Feb-05
A 72	Nawzad	White Kishmish	8,000	8,000	8,000	14-Feb-05
A 73	Sangin	White Kishmish	8,000	8,000	8,000	20-Feb-05
A 75	Musaqulla	White Kishmish	8,000	8,000	8,000	21-Feb-05
A 76	Kajaki	White Kishmish	8,000	8,000	5,000	25-Feb-05
A 79	Sangin	White Kishmish	5,000	5,000	8,000	1-Mar-05
A 109	Garmsir	Shundokhani	8,000	8,000	10,000	9-Feb-05
A 110	Garmsir	Shundokhani	8,000	8,000	10,000	9-Feb-05
A 111	Nahrisaraj	Shundokhani	10,000	10,000	8,000	9-Feb-05
A 113	Nad-I-Ali	White Kishmish	10,000	10,000	10,000	11-Feb-05
A 116	Marja	White Kishmish	8,000	8,000	10,000	12-Feb-05
A 118	Nawa	Shundokhani	10,000	10,000	10,000	12-Feb-05
A 119	Central	White Kishmish	10,000	10,000	20,000	19-Feb-05
A 120	Central	White Kishmish	10,000	10,000	8,000	6-Mar-05
A 135	Nahrisaraj	White Kishmish	20,000	20,000	8,000	12-May-05

f. Okra Report:

Introduction:

Okra is high in Vitamin C, A, and fiber. In addition Okra has low amounts of many other vitamins and minerals making it very dense in nutrition. Okra is a summer crop since it requires a great deal of heat to produce high yields. Okra is vulnerable to frost damage and entire crops can be destroyed if it has been sown before the frost. Okra does best in temperatures that range from 21-35 C. The optimal sowing date for okra is April and the best time to harvest okra is in June or July.

Plot Description:

12 different plots of Okra have been planted this year under the ALQIP program. 2 of these okra plots have been placed under drip irrigation. Lady Finger okra seeds have been planted on plot A 121, for all other plots Clemson Spineless okra seeds have been used. In previous seasons our CADG research farms have conducted trials to determine the best varieties for local conditions. Ten different varieties of okra have been tested in 2002. Clemson spineless is the main variety that we have chosen for distribution, due to the high yield of 14,950 kg per hectare that is variety has produced. Okra, when compared to the other crops such as cotton and peanuts have a low selling price, which averages around $0.16 per kg of yield. Due to the high amount of yield per hectare that framers produce, Okra is still a profitable crop.

Impact:

Yield and NETT Income:

The results of the Okra crops are mixed; plot A 81 had the highest yield per hectare (110% higher than the traditional yield). The Lady Finger okra variety has also been a successful variety and has produced a yield per hectare that is 71% higher than the traditional yield. Below is a chart comparing one of our demonstration plots most accurately followed best practices and has produced a high 1/3rd average yield per hectare when compared to the other demonstration plots. With continuous reinforcement and direction from out extension workers on best practices all farmers could easily produce a yield per hectare that is equal if not higher than the yield per hectare below.

Plot Reference Number	District	Planted Area (Sq Meters)	Drip	Sowing Date	Harvest date	Yield (kg) per Hectare	Traditional Yield	Yield Increase per Hectare	NETT Income
A 15	Arghandab	2000	-	3/26/2005	10/18/2005	18380	13535	4,845	$1,112

The NET income of these okra demonstration plots are strongly correlated with the amount of Yield that is produced by the demonstration plots. Some farmers however have been able to manage their costs more effectively and as a result have lower total costs and selling their crops for higher prices.

Many of our demonstration plots that produced low yields and NETT income are in the Kandahar province. Okra plots have been much more successful this year than the corn and cotton demonstration plots. Most of our plots have produced NET incomes ranging from around $750 to $2,500 per hectare for the season.

Cost and Income:

By instituting new practices we have the costs of these plots, which increase the severity that a failing crop has on a farmer. With okra we have given farmers new

types of fertilizer to use and more labor intensive practices. Only two of these plots use drip irrigation, and many farmers are avoiding the $250 dollar maintenance cost for this drip system. This has resulted in as high as 80% increase in income when compared to the traditional income, while costs are only increasing as high as 61%.

Plot Reference Number	Plow Leveling Ridges Costs (USD) per Hectare	DAP Fertilizer (USD) Costs per Hectare	Fertilizer (UREA) Cost per Hectare	Seed Pricing (USD) per Hectare	Weeding Costs (USD) per Hectare	Sowing Harvesting Costs (USD) per Hectare	Farmer Share (USD) per Hectare	Mullah Share (USD) per Hectare	Other Cost (USD) per Hectare	Total Cost per Hectare	Total Income
A 15	$110.00	$127.00	$62.50	0	$240.00	$150.00	$515	$257.32	$0.00	$1,462.00	$2,573
Traditional	$105.00	0	$50.00	$5.00	$80.00	0	$632	$189.50	0	$956.5	$1,895

By increasing the amount that a farmer spends on weeding, sowing, and harvesting his plots, as well as using DAP fertilizer, the farmer of plot A 15 has increased his income per hectare by 26%. Although the cost has increased by 35% farmers this farmer is still making a greater NETT income.

Conclusion:

There have been many successful farmers who have grown Okra this year and have produced high NET incomes even with the low selling price. There is still room for improvement as farmers can continue to improve their yields through the use of a drip irrigation system and plastic tunnels (to obtain earlier harvesting). We are continuing to encourage farmers to plant other crop types as it is our fear that many farmers are tempted to grow only a few of the crops that they know will do well. Which means everyone plants the same selection of crops leading to over supply of markets. At the moment the local Afghan markets are suffering from being over supplied with the same kinds of crops and varieties, which is lowering the potential income that farmers could make. It is essential that farmers learn to find for themselves what vegetables are in high demand and grow these vegetables and not just the vegetables that can produce the high yield.

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ALQIP Okra Yield Data

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		Planted Area (Sq Metres)	Drip (Sq. Metres)	Trellis (Sq. Metres)	Under Plastic (Sq. metres)	None (Sq.Metres)
Selected Demonstration Plots	Sq Metres	21,167	4,167	-	-	17,000
	Hectares	2.12	0.42	-	-	1.70
	Jeribs	11	2	-	-	9
	No of Plots	12	2	-	-	10
Total Demonstration Plots	Sq Metres	1,519,900	1,428,800	193,800	-	81,100
	Hectares	151.99	142.88	19.38	-	8.11
	Jeribs	760	714	97	-	41
	No of Plots	261	188	24	-	72

	Total Cost per Hectare	Income (USD per Hectare)	Price (USD per Kg)	NET Income (USD) per Hectare	Traditional Yield (Kg per Hectare)	Yield (Kg per Hectare)	Increase/Decrease in Yield per Hectare	Percentage Increase/Decrease in Yield per Hectare
Avg / Ha	$1,159	$1,841	$0.14	$280	13,018 kg	12,245 kg	1,193 kg	15%
Avg / Jerib	$232	$368	$0.00	$56	2,604 kg	2,449 kg	239 kg	0%
Maximum	$2,446	$4,878	$0.30	$2,432	15,000 kg	28,460 kg	14,925 kg	110%
75% of Max	$1,802	$3,359	$0.22	$1,356	14,009 kg	20,353 kg	8,059 kg	63%
Nr Plots	12	10	10	12	12	10	10	10

Ref Number (1per plot, same for intercrop)	Crop	Variety	District	Sowing Date	Drip (Sq. Metres)	Trellis (Sq. Metres)	Under Plastic (Sq. metres)	None (Sq.Metres)	Harvest date	Yield (Total Kg) per Plot	Price per Kg (Afs)	Total Cost per Hectare	Income (USD per Hectare)	Selling Price (USD per Kg)	NET Income (USD) per Hectare	Traditional Yield (Kg per Hectare)	Yield (Kg per Hectare)	Increase/Decrease in Yield per Hectare	Percentage Increase/Decrease in Yield per Hectare
A 44	Okra	Clemson spineless	Daman	30-Apr-05				1,000		0		$0			$0	13,535			
A 60	Okra	Clemson spineless	Khakriz	10-Apr-04	167					0		$0			$0	13,535			
A 81	Okra	Climson spinless	Musaqlla	2-Apr-05				2,000	28-Jun-05	5,692	7.0	$2,118	$3,984	$0.14	$1,867	13,535	28,460	14,925	110%
A 121	Okra	Lady Finger	Garmsir	5-Apr-05				1,000	25-Jun-05	2,315	8.0	$2,145	$3,704	$0.16	$1,559	13,535	23,150	9,615	71%
A 15	Okra	Clemson spineless	Arghandab	26-Mar-05				2,000	18-Oct-05	3,676	7.0	$1,462	$2,573	$0.14	$1,112	12,500	18,380	5,880	47%
A 84	Okra	Climson Spinless	KaJaki	20-Apr-05				1,000	25-Jul-05	1,742	14.0	$2,446	$4,878	$0.28	$2,432	13,535	17,420	3,885	29%
A 4	Okra	Clemson spineless	Panjwai	24-Mar-05				2,000	24-Oct-05	3,262	5.7	$1,290	$1,859	$0.11	$569	15,000	16,310	1,310	9%
A 35	Okra	Clemson spineless	Maiwand	15-Apr-05				2,000	20-Sep-05	1,636	6.6	$677	$1,080	$0.13	$403	7,500	8,180	680	9%
A 240	Okra	Clemson spineless	Panjwai	24-Jun-05	4,000				25-Oct-05	2,610	6.8	$1,028	$887	$0.14	-$140	6,250	6,525	275	4%
A 3	Okra	Clemson spineless	Panjwai	8-Apr-05				2,000	26-Oct-05	1,273	6.0	$987	$764	$0.12	-$223	12,000	6,365	-5,635	-47%
A 53	Okra	Clemson spineless	Khakriz	1-May-05				2,000	15-Nov-05	1,215	15.0	$1,665	$1,823	$0.30	$158	5,000	6,075	1,075	22%
A 16	Okra	Clemson spineless	Arghandab	10-Apr-05				2,000	22-Sep-05	1,084	5.0	$400	$542	$0.10	$142	5,000	5,420	420	8%

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ALQIP Okra Cost Data

CADG Development Group

		Planted Area (Sq. Metres)	Drip (Sq. Metres)	Trellis (Sq. Metres)	Under Plastic (Sq. metres)	None (Sq.Metres)		Plow/Leveling/Ridges Costs (USD) per Hectare	DAP Fertilizer (USD) Costs per Hectare	Fertilizer (UREA) Cost per Hectare	Seed Pricing (USD) per Hectare	Irrigation Costs (USD) per Hectare	Pesticides Cost (USD) per Hectare	Weeding Costs (USD) per Hectare	Transportation Costs (USD) per Hectare	Thresher Costs (USD) per Hectare	Sowing/Havesting Costs (USD) per Hectare	Farmer Share (USD) per Hectare	Mulla Share (USD) per Hectare	Other Cost (USD) per Hectare	Total Cost per Hectare	Income (USD per Hectare)	Prices (USD per Kg)	NET Income (USD) per Hectare	Yield (Kg per Hectare)	Increase/Decrease in Yield per Hectare	Percentage Increase/Decrease in Yield per Hectare
Selected Demonstration Plots	**Sq Metres**	21,167	4,167	-	-	17,000																					
	Hectares	2.12	0.42	-	-	1.70	**Avg / Ha**	**$105.00**	**$127.50**	**$50.00**	**$5.00**			**$80.00**				**$357.05**	**$184.09**		**$1,159**	**$1,841**	**$0.14**	**$280.47**	**12,245 kg**	**1,193 kg**	**15%**
	Jeribs	11	2	-	-	9	**Avg / Jerib**	**$21.00**	**$25.50**	**$10.00**	**$1.00**			**$16.00**				**$71.41**	**$36.82**		**$232**	**$368**		**$56.09**	**2,449 kg**	**239 kg**	
							Maximum	**$447**	**$300**	**$73**	**$400.00**	**$277**		**$250**			**$150**	**$1,458**	**$488**	**$420**	**$2,446**	**$4,878**	**$0.30**	**$2,432**	**28,460 kg**	**#######**	**110%**
							75% of Max	**$276**	**$214**	**$62**	**$202.50**	**$138**		**$165**			**$75**	**$907**	**$336**	**$210**	**$1,802**	**$3,359**	**$0.22**	**$1,356**	**20,353 kg**	**8,059 kg**	**63%**
	No of Plots	12	2	-	-	10	**Nr Plots**	**12**	**12**	**11**	**12**	**9**	**9**	**11**	**9**	**9**	**9**	**12**	**10**	**10**	**12**	**10**	**10**	**12**	**10**	**10**	**10**
Total Demonstration Plots	**Sq Metres**	1,519,900	1,428,800	193,800	-	81,100																					
	Hectares	151.99	142.88	19.38	-	8.11																					
	Jeribs	760	714	97	-	41																					
	No of Plots	261	188	24	-	72																					

Ref Number (1per plot, same for intercrop)	Crop	Variety	District	Sowing Date	Drip (Sq. Metres)	Trellis (Sq. Metres)	Under Plastic (Sq. metres)	None (Sq.Metres)	Harvest date	Plow/Leveling/Ridges Costs (USD) per Hectare	DAP Fertilizer (USD) Costs per Hectare	Fertilizer (UREA) Cost per Hectare	Seed Pricing (USD) per Hectare	Irrigation Costs (USD) per Hectare	Pesticides Cost (USD) per Hectare	Weeding Costs (USD) per Hectare	Transportation Costs (USD) per Hectare	Thresher Costs (USD) per Hectare	Sowing/Havesting Costs (USD) per Hectare	Farmer Share (USD) per Hectare	Mulla Share (USD) per Hectare	Other Cost (USD) per Hectare	Total Cost per Hectare	Income (USD per Hectare)	Selling Price (USD per Kg)	NET Income (USD) per Hectare	Yield (Kg per Hectare)	Increase/Decrease in Yield per Hectare	Percentage Increase/Decrease in Yield per Hectare
A 44	Okra	Clemson spineless	Daman	30-Apr-05				1,000																					
A 60	Okra	Clemson spineless	Khakriz	10-Apr-04	167																								
A 81	Okra	Climson spinless	Musaqlla	2-Apr-05				2,000	28-Jun-05	80.00	128.00	56.00	10.00			160.00				1,285.30	398.44		2,118	3,984	$0.14	$1,867	28,460	14,925	110%
A 121	Okra	Lady Finger	Garmsir	5-Apr-05				1,000	25-Jun-05	200.00	300.00		40.00							1,234.67	370.40	420.00	2,145	3,704	$0.16	$1,559	23,150	9,615	71%
A 15	Okra	Clemson spineless	Arghandab	26-Mar-05				2,000	18-Oct-05	110.00	127.00	62.50				240.00			150.00	514.70	257.32		1,462	2,573	$0.14	$1,112	18,380	5,880	47%
A 84	Okra	Climson Spinless	KaJaki	20-Apr-05				1,000	25-Jul-05	200.00	120.00	50.00	10.00			120.00				1,457.80	487.76		2,446	4,878	$0.28	$2,432	17,420	3,885	29%
A 4	Okra	Clemson spineless	Panjwai	24-Mar-05				2,000	24-Oct-05	436.60	129.10					120.00				418.30	185.93		1,290	1,859	$0.11	$569	16,310	1,310	9%
A 35	Okra	Clemson spineless	Maiwand	15-Apr-05				2,000	20-Sep-05	90.00	140.00					80.00				258.60	107.98		677	1,080	$0.13	$403	8,180	680	9%
A 240	Okra	Clemson spineless	Panjwai	24-Jun-05	4,000				25-Oct-05	116.60	120.00	70.00	60.00	276.50						295.80	88.74		1,028	887	$0.14	-$140	6,525	275	4%
A 3	Okra	Clemson spineless	Panjwai	8-Apr-05				2,000	26-Oct-05	446.60	129.10	73.00	10.00			80.00				171.80	76.38		987	764	$0.12	-$223	6,365	-5,635	-47%
A 53	Okra	Clemson spineless	Khakriz	1-May-05				2,000	15-Nov-05	100.00	75.00	50.00	400.00			250.00				607.50	182.25		1,665	1,823	$0.30	$158	6,075	1,075	22%
A 16	Okra	Clemson spineless	Arghandab	10-Apr-05				2,000	22-Sep-05	100.00	137.50									108.40	54.20		400	542	$0.10	$142	5,420	420	8%

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g. Peanuts Report:

Introduction:

Peanuts contain a large amount of protein, carbohydrates, and oil. A single peanut kernel contains 43% to 54% percent oil which can be processed and used as cooking oil. Peanuts are a summer time crop and perform best in temperatures of 25 C to 30 C. The optimal time to sow peanut seeds in southern Afghanistan is in May and the optimal time to harvest peanuts is in late October to early November.

Plot Description:

9 different plots have been planted in the Helmand district under the ALQIP program. Local peanuts seeds have been used for plot A 9, for the other plots Jumbo peanut seeds are used. All peanut plots except plot A 86 use drip irrigation systems. Virginia Jumbo peanuts have been grown in our CADG research farm in 2002. The results of the plots produced a yield of 289.75 kg per hectare. The low yield in this test is due to the late planting dates. The peanut crops have been sown in early July which is very late for this crop. The late sowing date for peanuts is due to the late arrival of seeds. Virginia Jumbo has been retested in 2003 and has produced a yield of 3,150 kg per hectare, which has shown the huge importance in planting crops during the optimal sowing dates.

Impact:

Income and Yield:

Plot A 87 produced the lowest yield per hectare out of all the plots. The farmer has not harvest until late November which may have caused the low yield. Plot A 86, which is the only plot not using a drip irrigation system, produced the second lowest yield per hectare out of all the plots however the yield is higher than the traditional yield per hectare. Plot A 9, which has used the local seed variety produced the third lowest yield and is just above the traditional yield value. All other Jumbo plots have produced yield that are between 27% and 63% higher that the traditional yield. Drip irrigation systems have greatly increased the amount of yield that is being produced with all but one plot being significantly higher in yield per hectare than peanut plot A 86 that has not had a drip irrigation installed. These peanuts are sold at a selling rate of $0.80 to $0.60 per kg, which is a very high selling price compared to the other crops. Many of the plots also produced yields that are higher than the expected yield. Below is a chart comparing one of our plots that produced the top 1/3rd average yield compared with the traditional yield that farmers have been producing. This chart indicates what is possible for each farmer to achieve by properly implementing out “best practices training.

Plot Reference Number	District	Planted Area (Sq Meters)	Drip	Sowing Date	Harvest date	Yield (kg) per Hectare	Income (USD) per Hectare	Traditional Yield	Yield Increase per Hectare	% Increase in Yield per Hectare
A 125	Central area	10,000	10,000	28-Apr-05	15-Oct-05	4,100	$2,870	2750	1,350	49.09%

Cost and NET Income:

The peanut crop have done well this year and all plots report positive NET incomes. Many of the plots have reported incomes higher than the traditional yield. The farmers that produced exceptionally high NET incomes per hectare are in Central and Nawa district. Many of the farmers are please NET income they produced from peanuts saying that it is their crop. There are differences in the NET Incomes being produced between the different farms show that some farmers are not following our "Best Practices" due to unfamiliarity of these practices. Below is a graph showing the Impact that our best practices had on plot A 125. Once farmers start implamenting these new practices the NET income for plot A 125 could easily become the new average NET income for all plots.

Cost And Income:

With the institution of best practices, costs have increased from traditional average costs by as much as 42%, however this increase in costs has resulted in an increase of up to 46%. These figures do not take into account the increase in the farmer's shares, which is usually 1/3rd of the plots total income. The farmers the demonstration plots have done well in managing their budgets and none of the farmer's costs being more than the traditional yield. Farmers that have spent over $1,600 have achieved the highest incomes of all our peanut demonstrations. These farmers are generally spending more money on pesticides and weeding. Farmers can still improve their weeding and harvesting practices.

Plot Reface Number	Plow Leveling Ridges Costs (USD) per Hectare	DAP Fertilizer (USD) Costs per Hectare	Fertilizer (UREA) Cost per Hectare	Weeding Costs (USD) per Hectare	Sowing Harvesting Costs (USD) per Hectare	Farmer Share (USD) per Hectare	Mullah Share (USD) per Hectare	Other Cost (USD) per Hectare	Total Cost per Hectare	Income (USD) per Hectare
A 125	$70.00	$50.00	$20.00	$16.00	$20.00	$876	$292	0	$1,658	$2,870
Traditional	$77.22	0	$37.56	$3.44	$17.33	$319.3	$95.97	0	$959.7	$1,650

Above is a chart comparing one of our plots that has produced a top 1/3rd yield with the traditional yield. Since this farmer has increased the costs of this plot he has made over $500 more than if he were to use traditional practices, and has increased his income from the traditional yield by 43%.

Conclusion:

Farmers have done well in producing peanuts this year. Almost all the peanut plots that used drip irrigation system produced yields per hectare that were higher than the traditional yield per hectare. Farmers need to pay more attention to weeding. Peanuts have the potential of become a very high priced crop, however it would be advised to test out new verities before any attempt is made to sell peanuts in the outside market as the peanuts being in the world market are of higher quality than the varieties being grown in Afghanistan at this time.

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ALQIP Peanuts Yield Data

CADG Development Group

		Planted Area (Sq Metres)	Drip (Sq. Metres)	Trellis (Sq. Metres)	Under Plastic (Sq. metres)	None (Sq.Metres)
Selected Demonstration Plots	**Sq Metres**	**67,000**	**63,000**	**-**	**-**	**4,000**
	Hectares	**6.70**	**6.30**	**-**	**-**	**0.40**
	Jeribs	**34**	**32**	**-**	**-**	**2**
	No of Plots	**9**	**8**	**-**	**-**	**1**
Total Demonstration Plots	**Sq Metres**	**1,519,900**	**1,428,800**	**193,800**	**-**	**81,100**
	Hectares	**151.99**	**142.88**	**19.38**	**-**	**8.11**
	Jeribs	**760**	**714**	**97**	**-**	**41**
	No of Plots	**261**	**188**	**24**	**-**	**72**

	Total Cost per Hectare	Income (USD per Hectare)	Price (USD per Kg)	**NET Income (USD) per Hectare**	Traditional Yield (Kg per Hectare)	Yield (Kg per Hectare)	Increase/Decrease in Yield per Hectare	Percentage Increase/Decrease in Yield per Hectare
Avg / Ha	**$1,163**	**$1,953**	**$0.60**	**$1,025**	**2,750 kg**	**3,825 kg**	**1,075 kg**	**42%**
Avg / Jerib	**$233**	**$391**	**$0.00**	**$205**	**550 kg**	**765 kg**	**215 kg**	**0%**
Maximum	**$1,659**	**$3,063**	**$0.70**	**$1,452**	**2,750 kg**	**4,500 kg**	**1,750 kg**	**64%**
75% of Max	**$1,411**	**$2,508**	**$0.65**	**$1,239**	**2,750 kg**	**4,163 kg**	**1,413 kg**	**53%**
Nr Plots	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**

Ref Number (1per plot, same for intercrop)	Crop	Variety	District	Sowing Date	Drip (Sq. Metres)	Trellis (Sq. Metres)	Under Plastic (Sq. metres)	None (Sq.Metres)	Harvest date	Yield (Total Kg) per Plot	Price per Kg (Afs)	Total Cost per Hectare	Income (USD per Hectare)	Selling Price (USD per Kg)	NET Income (USD) per Hectare	Traditional Yield (Kg per Hectare)	Yield (Kg per Hectare)	Increase/Decrease in Yield per Hectare	Percentage Increase/Decrease in Yield per Hectare
A 149	Peanut	Jumbo	Nawa	26-May-05	10,000				26-Nov-05	4,500	34.0	$1,644	$3,060	$0.68	$1,417	2,750	4,500	1,750	64%
A 139	Peanut	Jumbo	Central area	16-May-05	8,000				16-Oct-05	3,500	35.0	$1,610	$3,063	$0.70	$1,452	2,750	4,375	1,625	59%
A 125	Peanut	Jumbo	Central area	28-Apr-05	10,000				15-Oct-05	4,100	35.0	$1,659	$2,870	$0.70	$1,211	2,750	4,100	1,350	49%
A 127	Peanut	Jumbo	Nad-I-Ali	29-Apr-05	6,000				27-Oct-05	2,340	30.0	$1,294	$2,340	$0.60	$1,046	2,750	3,900	1,150	42%
A 254	Peanut	Jumbo	Nahrisaraj	2-May-05	8,000				5-Nov-05	3,060	24.0	$1,163	$1,836	$0.48	$673	2,750	3,825	1,075	39%
A 145	Peanut	Jumbo	Garmsir	25-May-05	8,000				2-Nov-05	2,790	28.0	$1,121	$1,953	$0.56	$832	2,750	3,488	738	27%
A 9	Peanut	Local	Arghandab	14-May-05	5,000				10-Nov-05	1,500	30.0	$775	$1,800	$0.60	$1,025	2,000	3,000	1,000	50%
A 86	Peanut	Jumbo	Musaqlla	14-May-05				4,000	25-Nov-05	1,152	29.0	$1,006	$1,670	$0.58	$665	2,750	2,880	130	5%
A 87	Peanut	Jumbo	Nawzad	18-May-05	8,000				26-Nov-05	2,160	30.0	$964	$1,620	$0.60	$656	2,750	2,700	-50	-2%

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ALQIP Peanuts Cost Data

CADG Development Group

		Planted Area (Sq Metres)	Drip (Sq. Metres)	Trellis (Sq. Metres)	Under Plastic (Sq. metres)	None (Sq.Metres)		Plow/Leveling/Ridges Costs (USD) per Hectare	DAP Fertilizer (USD) Costs per Hectare	Fertilizer (UREA) Cost per Hectare	Seed Pricing (USD) per Hectare	Irrigation Costs (USD) per Hectare	Pesticides Cost (USD) per Hectare	Weeding Costs (USD) per Hectare	Transportation Costs (USD) per Hectare	Thresher Costs (USD) per Hectare	Sowing/Havesting Costs (USD) per Hectare	Farmer Share (USD) per Hectare	Mulla Share (USD) per Hectare	Other Cost (USD) per Hectare	Total Cost per Hectare	Income (USD per Hectare)	Price (USD per Kg)	NET Income (USD) per Hectare	Yield (Kg per Hectare)	Increase/Decrease in Yield per Hectare	Percentage Increase/Decrease in Yield per Hectare
Selected Demonstration Plots	**Sq Metres**	67,000	63,000	-	-	4,000																					
	Hectares	6.70	6.30	-	-	0.40	**Avg / Ha**	**$70.00**	**$70.00**	**$32.50**	**$25.00**	**$268.14**	**$8.13**	**$16.00**	**$18.00**	**$25.00**	**$20.00**	**$501.10**	**$183.60**		**$1,163**	**$1,953**	**$0.60**	**#######**	**3,825 kg**	**1,075 kg**	**42%**
	Jeribs	34	32	-	-	2	**Avg / Jerib**	**$14.00**	**$14.00**	**$6.50**	**$5.00**	**$53.63**	**$1.63**	**$3.20**	**$3.60**	**$5.00**	**$4.00**	**$100.22**	**$36.72**		**$233**	**$391**		**$205.00**	**765 kg**	**215 kg**	
							Maximum	**$100**	**$135**	**$70**	**$28.00**	**$325**	**$20**	**$188**	**$80**	**$50**	**$100**	**$934**	**$311**		**$1,659**	**$3,063**	**$0.70**	**$1,452**	**4,500 kg**	**1,750 kg**	**64%**
							75% of Max	**$85**	**$103**	**$51**	**$26.50**	**$297**	**$14**	**$102**	**$49**	**$38**	**$60**	**$717**	**$247**		**$1,411**	**$2,508**	**$0.65**	**$1,239**	**4,163 kg**	**1,413 kg**	**53%**
	No of Plots	9	8	-	-	1	**Nr Plots**	**9**	**9**	**9**	**5**	**8**	**4**	**3**	**5**	**2**	**5**	**9**	**9**	**1**	**9**	**9**	**9**	**9**	**9**	**9**	**9**
Total Demonstration Plots	**Sq Metres**	1,519,900	1,428,800	193,800	-	81,100																					
	Hectares	151.99	142.88	19.38	-	8.11																					
	Jeribs	760	714	97	-	41																					
	No of Plots	261	188	24	-	72																					

Ref Number (1per plot, same for intercrop)	Crop	Variety	District	Sowing Date	Drip (Sq. Metres)	Trellis (Sq. Metres)	Under Plastic (Sq. metres)	None (Sq.Metres)	Harvest date	Plow/Leveling/Ridges Costs (USD) per Hectare	DAP Fertilizer (USD) Costs per Hectare	Fertilizer (UREA) Cost per Hectare	Seed Pricing (USD) per Hectare	Irrigation Costs (USD) per Hectare	Pesticides Cost (USD) per Hectare	Weeding Costs (USD) per Hectare	Transportation Costs (USD) per Hectare	Thresher Costs (USD) per Hectare	Sowing/Havesting Costs (USD) per Hectare	Farmer Share (USD) per Hectare	Mulla Share (USD) per Hectare	Other Cost (USD) per Hectare	Total Cost per Hectare	Income (USD per Hectare)	Selling Price (USD per Kg)	NET Income (USD) per Hectare	Yield (Kg per Hectare)	Increase/Decrease in Yield per Hectare	Percentage Increase/Decrease in Yield per Hectare
A 149	Peanut	Jumbo	Nawa	26-May-05	10,000				26-Nov-05	100.00	135.00	70.00		264.00			80.00			688.50	306.00		1,644	3,060	$0.68	$1,417	4,500	1,750	64%
A 139	Peanut	Jumbo	Central area	16-May-05	8,000				16-Oct-05	70.00	31.25	18.75		186.00	6.25	15.00	18.00		20.00	933.75	311.25		1,610	3,063	$0.70	$1,452	4,375	1,625	59%
A 125	Peanut	Jumbo	Central area	28-Apr-05	10,000				15-Oct-05	70.00	50.00	20.00		286.80	10.00	16.00	18.00		20.00	876.00	292.00		1,659	2,870	$0.70	$1,211	4,100	1,350	49%
A 127	Peanut	Jumbo	Nad-I-Ali	29-Apr-05	6,000				27-Oct-05	65.00	66.00	29.00	28.00	292.67			40.00			535.50	238.00		1,294	2,340	$0.60	$1,046	3,900	1,150	42%
A 254	Peanut	Jumbo	Nahrisaraj	2-May-05	8,000				5-Nov-05	80.00	70.00	52.50	19.20	272.28				50.00		435.60	183.60		1,163	1,836	$0.48	$673	3,825	1,075	39%
A 145	Peanut	Jumbo	Garmsir	25-May-05	8,000				2-Nov-05	70.00	125.00	32.50		325.00					100.00	371.08	97.65		1,121	1,953	$0.56	$832	3,488	738	27%
A 9	Peanut	Local	Arghandab	14-May-05	5,000				10-Nov-05	50.00	80.00			187.50		187.50				180.00	90.00		775	1,800	$0.60	$1,025	3,000	1,000	50%
A 86	Peanut	Jumbo	Musaqlla	14-May-05				4,000	25-Nov-05	80.00	122.50	60.00	25.00						50.00	501.10	167.05		1,006	1,670	$0.58	$665	2,880	130	5%
A 87	Peanut	Jumbo	Nawzad	18-May-05	8,000				26-Nov-05	80.00	60.00	50.00	25.00	263.10	20.00					384.75	81.00		964	1,620	$0.60	$656	2,700	-50	-2%

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h. Sunflower Report:

Introduction:

There are 2 types of sunflower, those rich in oil and those that are good for eating, namely confectionary. Sunflowers are mainly grown for the high content of oil in the seed. The oil has been used for cooking, as a broth for soups, or for painting. Sunflowers have also been used to feed the farmer's livestock. Sunflowers are primarily a summer crop but have been known to be able to withstand frost during their early stages. The optimal time for sowing is in May, and the optimal time to harvest sunflower is in late August to early September.

Plot Description:

10 sunflower demonstrations plots have been established containing five different varieties. These varieties have first been tested in our research farm in Helmand in 2003 and 2004. In 2003 10 varieties of sunflowers were tested in CADG research farms. Of the varieties tested TS 3301 C, TS 3308, were distributed. TS 3301 C produced a yield of 839 kg per hectare, TS 3308 produced a much higher yield of 1,667 kg per hectare. These varieties were tested again in 2004 TS 3301 produced a yield of 2,664 kg per hectare while TS 3308 produced a yield of 3,219kg per hectare. In 2005 15 varieties of sunflowers were tested including TS 3301 and 3308. The yields that were produced were even higher this year as TS 3301 produced a yield of 3132 kg per hectare and TS 3308 produced a yield of 2846. The selling price of sunflower seeds is high compared to the other crops and ranges form $0.60 to $0.85 per kg, depending on the location and quality of yield. Plot A 92 and A 146 are the only plots that have not used a drip irrigation system.

Impact:

Yield and NETT Income:

There are large variations between the different yields for all the TS 3308 sunflower variety demonstration plots. Most of the plots produced yields that are higher than the traditional yield. Plot A 146 produced the lowest yield per hectare. This plot is the only plot of this variety that was not placed under a drip irrigation system. Plot A 146 made the lowest Income of all the plots and had the second to lowest selling price on the market. None of the yields of this variety have reached their expected yields showing that farmers still need to improve in their farming practices.

Both the Ralls Texas and the TX 3001 C sunflower varieties produced yields that were far above the traditional yield. However none of the varieties produced yields higher than the expected yield. The Local variety sunflower crops produced very

low yields that on average are barely above the traditional yields. Using best practices seemed to have very little effect on the local variety crops.

Plot A 179 and A 233 have exceptionally high NET incomes partially due to the high yield as well as the high selling price that the farmer was able to achieve. Farmers growing this variety have not fully adopted pest and weed control in their farming practices. Pests and weeds continue to present a huge problem in Afghanistan and have resulted in many crop failures across the country.

Plot Reference Number	District	Planted Area (Sq Meters)	Drip	Sowing Date	Harvest date	Income (USD) per Hectare	Traditional Yield	Yield Increase per Hectare	NETT Income per Hectare
A 199	Nawa	10,000	Yes	10-Jun-05	23-Nov-05	$1,133	1,000	1,750	$376

Above is a chart comparing one of our top 1/3rd demonstration plots for this variety with the traditional yield. Through the aid of drip and DAP fertilizer this farmer has increased his yield by 750 kg per hectare.

Cost and Income:

The 2 major costs that have been added to the plots through best practices are the cost of DAP fertilizer and maintenance of a drip irrigation system which increases the costs by $321 per Hectare. Through the installation of these new practices farmers have increased their income by as much as 200%.

Ref Number (1per plot, same for intercrop)	Plow Leveling Ridges Costs (USD) per Hectare	DAP Fertilizer (USD) Costs per Hectare	Fertilizer (UREA) Cost per Hectare	Farmer Share (USD) per Hectare	Mullah Share (USD) per Hectare	Total Cost per Hectare	Income (USD per Hectare)
A 199	$100.00	$67.5	$70.00	$299.26	$122.00	$954.00	$1,330
Traditional	$80.00	$0.00	$49.67	$223.33	$67.00	$538.75	$670

By increasing the costs of plot A 199 has almost doubled the income from the average traditional income, and has increased the farmer's and mullah's shares from the plot. We have had some cases where farmers have spent higher amounts of money on their crop but have produced lower incomes than the traditional yield. Plot A 134 is an example where the farmer has spent money on drip irrigation and fertilizer, but has neglected to put aside a budget for pest control and weeding.

Conclusion:

Many farmers in the Helmand and Kandahar province are using local seeds to grow their crops. These seeds have not been tested for disease or quality, nor selected for best yields or head size, which results in low yields / net incomes. It is important that farmers get high quality seeds in order to be able make profits from their crops. Drip irrigation systems are also hugely beneficial to these crops as, even though they have a high running cost, they also greatly increase the NETT income that these crops produce. Secondly drip irrigation systems reduce many other costs that have not been taken into account when calculating the NETT income, such as water conservation and minimizing the weeding costs, better fertilizer application, etc. Some of the farmers of these demonstration plots still need to be educated on best practices as many weeds and insects can still be found on their crops.

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ALQIP Sunflower Yield Data

CADG Development Group

		Planted Area (Sq Metres)	Drip (Sq. Metres)	Trellis (Sq. Metres)	Under Plastic (Sq. metres)	None (Sq.Metres)
Selected Demonstration Plots	**Sq Metres**	**52,000**	**48,000**	**-**	**-**	**4,000**
	Hectares	**5.20**	**4.80**	**-**	**-**	**0.40**
	Jeribs	**26**	**24**	**-**	**-**	**2**
	No of Plots	**10**	**8**	**-**	**-**	**2**
Total Demonstration Plots	**Sq Metres**	**1,519,900**	**1,428,800**	**193,800**	**-**	**81,100**
	Hectares	**151.99**	**142.88**	**19.38**	**-**	**8.11**
	Jeribs	**760**	**714**	**97**	**-**	**41**
	No of Plots	**261**	**188**	**24**	**-**	**72**

	Total Cost per Hectare	Income (USD per Hectare)	Price (USD per Kg)	**NET Income (USD) per Hectare**	Traditional Yield (Kg per Hectare)	Yield (Kg per Hectare)	Increase/Decrease in Yield per Hectare	Percentage Increase/Decrease in Yield per Hectare
Avg / Ha	**$838**	**$791**	**$0.67**	**$21**	**1,000 kg**	**1,267 kg**	**267 kg**	**27%**
Avg / Jerib	**$168**	**$158**	**$0.00**	**$4**	**200 kg**	**253 kg**	**53 kg**	**0%**
Maximum	**$1,422**	**$2,108**	**$0.85**	**$999**	**1,000 kg**	**2,635 kg**	**1,635 kg**	**164%**
75% of Max	**$1,130**	**$1,450**	**$0.76**	**$510**	**1,000 kg**	**1,951 kg**	**951 kg**	**95%**
Nr Plots	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**

Ref Number (1per plot, same for intercrop)	Crop	Variety	District	Sowing Date	Drip (Sq. Metres)	Trellis (Sq. Metres)	Under Plastic (Sq. metres)	None (Sq.Metres)	Harvest date	Yield (Total Kg) per Plot	Price per Kg (Afs)	Total Cost per Hectare	Income (USD per Hectare)	Selling Price (USD per Kg)	NET Income (USD) per Hectare	Traditional Yield (Kg per Hectare)	Yield (Kg per Hectare)	Increase/Decrease in Yield per Hectare	Percentage Increase/Decrease in Yield per Hectare
A 92	Sunflower	Ts 3301 C	Musaqlla	29-May-05				2,000	29-May-05	527	40.0	$1,109	$2,108	$0.80	$999	1,000	2,635	1,635	164%
A 199	Sunflower	Ralls Texas	Nawa	6-Jun-05	10,000				1-Nov-05	1,750	38.0	$954	$1,330	$0.76	$376	1,000	1,750	750	75%
A 233	Sunflower	TS 3308 oil seeds	Zhari	7-Jun-05	2,000				14-Sep-05	338	40.0	$1,422	$1,352	$0.80	-$70	1,000	1,690	690	69%
A 238	Sunflower	3301 C and TS 33	Panjwai	8-Jun-05	4,000				2-Oct-05	540	29.0	$861	$783	$0.58	-$78	1,000	1,350	350	35%
A 179	Sunflower	TS 3301C	Nahrisaraj	10-Jun-05	6,000				23-Nov-05	800	42.5	$926	$1,133	$0.85	$207	1,000	1,333	333	33%
A 198	Sunflower	Local	Nahrisaraj	19-Jun-05	6,000				28-Sep-05	720	33.3	$747	$799	$0.67	$52	1,000	1,200	200	20%
A 142	Sunflower	TS 3308	Nahrisaraj	20-May-05	6,000				2-Oct-05	705	33.3	$774	$783	$0.67	$8	1,000	1,175	175	18%
A 180	Sunflower	Local	Nahrisaraj	13-Jun-05	8,000				7-Oct-05	774	33.3	$611	$644	$0.67	$33	1,000	968	-33	-3%
A 134	Sunflower		Central area	12-May-05	6,000				23-Oct-05	550	22.2	$815	$407	$0.44	-$408	1,000	917	-83	-8%
A 146	Sunflower	TS 3308	Nahrisaraj	25-May-05				2,000	4-Oct-05	97	33.3	$564	$323	$0.67	-$241	1,000	485	-515	-52%

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ALQIP Sunflower Cost Data

CADG Development Group

		Planted Area (Sq Metres)	Drip (Sq. Metres)	Trellis (Sq. Metres)	Under Plastic (Sq. metres)	None (Sq.Metres)		Plow/Leveling/Ridges Costs (USD) per Hectare	DAP Fertilizer (USD) Costs per Hectare	Fertilizer (UREA) Cost per Hectare	Seed Pricing (USD) per Hectare	Irrigation Costs (USD) per Hectare	Pesticides Cost (USD) per Hectare	Weeding Costs (USD) per Hectare	Transportation Costs (USD) per Hectare	Thresher Costs (USD) per Hectare	Sowing/Havesting Costs (USD) per Hectare	Farmer Share (USD) per Hectare	Mulla Share (USD) per Hectare	Other Cost (USD) per Hectare	Total Cost per Hectare	Income (USD per Hectare)	Price (USD per Kg)	NET Income (USD) per Hectare	Yield (Kg per Hectare)	Increase/Decrease in Yield per Hectare	Percentage Increase/Decrease in Yield per Hectare
Selected Demonstration Plots	**Sq Metres**	52,000	48,000	-	-	4,000																					
	Hectares	5.20	4.80	-	-	0.40	**Avg / Ha**	**$80.00**	**$57.08**	**$49.67**	**$3.75**	**$264.00**		**$45.00**	**$31.00**	**$40.00**		**$210.08**	**$89.58**		**$838**	**$791**	**$0.67**	**$20.59**	**1,267 kg**	**267 kg**	**27%**
	Jeribs	26	24	-	-	2	**Avg / Jerib**	**$16.00**	**$11.42**	**$9.93**	**$0.75**	**$52.80**		**$9.00**	**$6.20**	**$8.00**		**$42.02**	**$17.92**		**$168**	**$158**		**$4.12**	**253 kg**	**53 kg**	
							Maximum	**$125**	**$140**	**$159**	**$6.00**	**$385**		**$160**	**$32**	**$80**		**$735**	**$211**		**$1,422**	**$2,108**	**$0.85**	**$999**	**2,635 kg**	**1,635 kg**	**164%**
							75% of Max	**$103**	**$99**	**$104**	**$4.88**	**$325**		**$103**	**$31**	**$60**		**$473**	**$150**		**$1,130**	**$1,450**	**$0.76**	**$510**	**1,951 kg**	**951 kg**	**95%**
	No of Plots	10	8	-	-	2	**Nr Plots**	**10**	**10**	**10**	**7**	**9**	**2**	**3**	**3**	**2**	**2**	**10**	**10**	**2**	**10**	**10**	**10**	**10**	**10**	**10**	**10**
Total Demonstration Plots	**Sq Metres**	1,519,900	1,428,800	193,800	-	81,100																					
	Hectares	151.99	142.88	19.38	-	8.11																					
	Jeribs	760	714	97	-	41																					
	No of Plots	261	188	24	-	72																					

Ref Number (1per plot, same for intercrop)	Crop	Variety	District	Sowing Date	Drip (Sq. Metres)	Trellis (Sq. Metres)	Under Plastic (Sq. metres)	None (Sq.Metres)	Harvest date	Plow/Leveling/Ridges Costs (USD) per Hectare	DAP Fertilizer (USD) Costs per Hectare	Fertilizer (UREA) Cost per Hectare	Seed Pricing (USD) per Hectare	Irrigation Costs (USD) per Hectare	Pesticides Cost (USD) per Hectare	Weeding Costs (USD) per Hectare	Transportation Costs (USD) per Hectare	Thresher Costs (USD) per Hectare	Sowing/Havesting Costs (USD) per Hectare	Farmer Share (USD) per Hectare	Mulla Share (USD) per Hectare	Other Cost (USD) per Hectare	Total Cost per Hectare	Income (USD per Hectare)	Selling Price (USD per Kg)	NET Income (USD) per Hectare	Yield (Kg per Hectare)	Increase/Decrease in Yield per Hectare	Percentage Increase/Decrease in Yield per Hectare
A 92	Sunflower	Ts 3301 C	Musaqlla	29-May-05				2,000	29-May-05	80.00	128.00	56.00				160.00				474.30	210.80		1,109	2,108	$0.80	$999	2,635	1,635	164%
A 199	Sunflower	Ralls Texas	Nawa	6-Jun-05	10,000				1-Nov-05	100.00	67.50	70.00		264.00			31.70			299.26	122.00		954	1,330	$0.76	$376	1,750	750	75%
A 233	Sunflower	TS 3308 oil seeds	Zhari	7-Jun-05	2,000				14-Sep-05	100.00	100.00	140.00		120.00				80.00		735.00	147.00		1,422	1,352	$0.80	-$70	1,690	690	69%
A 238	Sunflower	3301 C and TS 3	Panjwai	8-Jun-05	4,000				2-Oct-05	125.00	83.30	158.60		165.70		45.00	31.00			208.50	43.90		861	783	$0.58	-$78	1,350	350	35%
A 179	Sunflower	TS 3301C	Nahrisaraj	10-Jun-05	6,000				23-Nov-05	80.00	46.67	40.00	6.00	385.30						255.00	113.33		926	1,133	$0.85	$207	1,333	333	33%
A 198	Sunflower	Local	Nahrisaraj	19-Jun-05	6,000				28-Sep-05	80.00	46.67	43.33	5.00	291.07						194.83	85.82		747	799	$0.67	$52	1,200	200	20%
A 142	Sunflower	TS 3308	Nahrisaraj	20-May-05	6,000				2-Oct-05	80.00	46.67	43.33	3.33	330.33						187.50	83.30		774	783	$0.67	$8	1,175	175	18%
A 180	Sunflower	Local	Nahrisaraj	13-Jun-05	8,000				7-Oct-05	60.00	35.00	32.50	3.75	251.25						158.75	70.00		611	644	$0.67	$33	968	-33	-3%
A 134	Sunflower		Central area	12-May-05	6,000				23-Oct-05	80.00	46.67	43.33	5.00	335.00						211.67	93.33		815	407	$0.44	-$408	917	-83	-8%
A 146	Sunflower	TS 3308	Nahrisaraj	25-May-05				2,000	4-Oct-05	80.00	140.00	60.00		10.00						189.50	84.20		564	323	$0.67	-$241	485	-515	-52%

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i. Tomato Report:

Introduction:

Tomato are heat sensitive plants and perform poorly when placed in harsh weather conditions such as constant heavy rain or very hot dry areas. They would do best in this country if they are grown under both drip irrigation and a plastic tunnel to ensure that they where planted in late winter / early spring. This way the drip irrigation system can maintain a constant supply of water and the plastic tunnel can block both harmful rays and frost. The optimal sowing date for tomatoes is in March / April and the best harvest date is in June / July. Through the use of the plastic tunnels it will be possible to extend the length of the harvest and thereby reduce the current peaks seen in the markets.

Plot Description:

On average the yield of all tomato varieties per hectare is 13,758 kg. The selling price of tomatoes varies significantly as farmers can make as low as $0.08 per kg of yield or as high as $0.32 per kg of yield. Traditionally a graph of the price curve will form a strong U shape with high selling prices early and late in the season when volumes are low and they are competing with the imported Pakistani tomatoes, and very low prices in the peak season when the farmers flood the local markets. The selling price of this crop however is generally low. Many tomato plots have suffered this year due to an outbreak of a tomato leaf curl virus. As a result many farmers have reported very low yields. In addition many farmers have grown other crops such as cucumbers as an intercrop on the same plot which has reduced the number of tomato plants on each plot, which also decreases the yield when per hectare comparisons are done. Below is a chart showing the estimated costs that a farmer must pay when using best practices. These tomato plots did not have drip irrigation systems or trellis systems installed.

Crop	Total Cost (USD/Hectare)									Total Cost
	Seed Price	Plow	Ridges	Fertilizer		Weeding (3 Times)	Pest & Disease	Leveling	Trellis	
				Urea	DAP					
Tomato	$20.00	$60.00	$50.00	$90.00	$120.00	$225.00	$50.00	$90.00	$100.00	$805.00

Results:

Income and Costs:

Tomato plots had very mixed results this year, however all tomato plots have produced yields that are below the traditional yield. The selling price for Pearson tomatoes have an average selling price of $0.10 per kg of yield which is lower than any of the other crops, which results in the low income that Pearson Tomatoes are producing on average. All Pearson tomatoes were grown in Kandahar province in the districts of Panjwai, Maiwand, and Daman.

The Caula variety is able to achieve the highest selling price of $0.39 per kg of yield and the highest yield per hectare of 21,650 kg per hectare. There are large differences in the yield produced between the two Roma variety crops. Both Roma crops are located in Arghandab and are both sold at the same selling price of $0.12 per kg of yield. The farmer growing Yakta variety tomato plot is able to get $0.18 per kg of yield. Due to the low yield this variety is able to achieve it produces the second to lowest income for the farmer out of all the varieties.

Yield and NET Income:

To ensure comparability of plots, the costs include the amount of money / portion of the harvest both the farmer takes as a salary for his labor and the Mullah takes from the crop for all tomato varieties.

Although this was a bad year for tomatoes farmers are still able to achieve positive net incomes on their plots. Both plot A 42 and A 36 have reported negative NET incomes due to the combination of a low selling price and low yields. The highest NETT income of all our tomato plots is A 122, which has produced a NETT income of $3,281 per hectare due to the high yield and selling price. Many of our plots have produced yields that are below the traditional yield per hectare of 22,000 kg. The farmers of these tomato plots have spent very little money on pest and disease control, which has contributed to low yields. Compared to the other three varieties of tomato best practices have had the least effect on Pearson, which have produced some of the worst results on the NET income. Best practices have not shown great improvement on the NET income that farmers are achieving. New varieties of tomatoes are being tested in Bolan farm.

Caula variety tomato shows great promise under best practices. Plot A 122 produced a NETT income of $3,281 per hectare. All of the varieties on average have produced a positive NET income, but only the Caula variety tomato has produced a NET income that is higher than that of the traditional yield.

Cost and Income:

For these plots farmers have spent little money on pest and disease control. All other varieties have produced Net incomes per hectare that are far lower than the traditional income per hectare this year. Plots such as A 41 have produced a high yield compared to many of the other plots, but has sold their yield at $0.10 per kg, this being one of the lowest selling prices of all the demonstration plots. This plot has also spent $450 on UREA fertilizer, far more than any of the other plots, and has not used any DAP fertilizer, which has been shown to increase a yield for most crops.

The price of weeding has been a huge cost for farmers, as these farmers as farmers are paying up to $800 dollars for weeding. Currently CADG is working with farmers to install drip irrigation systems and plastic tunnels which will work to both keep out harmful viruses and insects, and reduce the amount of weeds that are produced in each plot.

Conclusion:

It is hard to determine how much of an effect best practices had on tomatoes this year to due a virus infecting many of the tomato crops and farmers intercropping tomatoes with cucumbers in the same plot. These tomato plots could greatly benefit from a trellis system, a drip irrigation system, and plastic tunnels so that healthy tomato plants are produced early in the season resulting in higher yields per hectare and higher selling prices. This also shows the huge importance of pest and disease control and how negating even one of the steps of best practices can result in the failure of an entire plot.

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ALQIP Tomatoes Yield Data

CADG Development Group

		Planted Area (Sq Metres)	Drip (Sq. Metres)	Trellis (Sq. Metres)	Under Plastic (Sq. metres)	None (Sq.Metres)
Selected Demonstration Plots	**Sq Metres**	**12,167**	**167**	**-**	**-**	**12,000**
	Hectares	**1.22**	**0.02**	**-**	**-**	**1.20**
	Jeribs	**6**	**0**	**-**	**-**	**6**
	No of Plots	**9**	**1**	**-**	**-**	**8**
Total Demonstration Plots	**Sq Metres**	**1,519,900**	**1,428,800**	**193,800**	**-**	**81,100**
	Hectares	**151.99**	**142.88**	**19.38**	**-**	**8.11**
	Jeribs	**760**	**714**	**97**	**-**	**41**
	No of Plots	**261**	**188**	**24**	**-**	**72**

	Total Cost per Hectare	Income (USD per Hectare)	Price (USD per Kg)	**NET Income (USD) per Hectare**	Traditional Yield (Kg per Hectare)	Yield (Kg per Hectare)	Increase/Decrease in Yield per Hectare	Percentage Increase/Decrease in Yield per Hectare
Avg / Ha	**$1,275**	**$1,542**	**$0.12**	**$86**	**8,500 kg**	**11,643 kg**	**2,698 kg**	**44%**
Avg / Jerib	**$255**	**$308**	**$0.00**	**$17**	**1,700 kg**	**2,329 kg**	**540 kg**	**0%**
Maximum	**$3,647**	**$6,928**	**$0.32**	**$3,281**	**22,000 kg**	**21,650 kg**	**12,620 kg**	**180%**
75% of Max	**$2,461**	**$4,235**	**$0.22**	**$1,684**	**15,250 kg**	**16,646 kg**	**7,659 kg**	**112%**
Nr Plots	**9**	**8**	**8**	**9**	**8**	**8**	**8**	**7**

Ref Number (1per plot, same for intercrop)	Crop	Variety	District	Sowing Date	Drip (Sq. Metres)	Trellis (Sq. Metres)	Under Plastic (Sq. metres)	None (Sq.Metres)	Harvest date	Yield (Total Kg) per Plot	Price per Kg (Afs)	Total Cost per Hectare	Income (USD per Hectare)	Selling Price (USD per Kg)	NET Income (USD) per Hectare	Traditional Yield (Kg per Hectare)	Yield (Kg per Hectare)	Increase/Decrease in Yield per Hectare	Percentage Increase/Decrease in Yield per Hectare
A 60	Tomato	Reogrand	Khakriz	10-Apr-04	167					0		$0			$0	22,000			
A 122	Tomato	Caula	Garmsir	7-Apr-05				1,000	29-Jun-05	2,165	16.0	$3,647	$6,928	$0.32	$3,281	22,000	21,650	-350	-2%
A 41	Tomato	Pearson	Daman	21-Apr-05				500	20-Sep-05	981	5.0	$1,876	$1,962	$0.10	$86	7,000	19,620	12,620	180%
A 14	Tomato	Roma	Arghandab	15-Apr-05				2,000	9-Sep-05	3,578	6.0	$1,275	$2,147	$0.12	$872	10,000	17,890	7,890	79%
A 8	Tomato	Pearson	Panjwai	20-Apr-05				2,000	25-Oct-05	2,767	5.0	$1,304	$1,384	$0.10	$80	12,500	13,835	1,335	11%
A 83	Tomato	Yakta 205	Musaqlla	13-Apr-05				2,000	30-Jul-05	1,890	9.0	$1,119	$1,701	$0.18	$582		9,450	9,450	
A 42	Tomato	Pearson	Daman	19-Apr-05				500	18-Sep-05	396	4.0	$1,449	$634	$0.08	-$815	5,500	7,920	2,420	44%
A 36	Tomato	Pearson	Maiwand	12-Apr-05				2,000	20-Sep-05	1,395	5.5	$926	$767	$0.11	-$159	4,000	6,975	2,975	74%
A 13	Tomato	Roma	Arghandab	25-Mar-05				2,000	8-Sep-05	1,112	6.0	$499	$667	$0.12	$168	5,000	5,560	560	11%

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ALQIP Tomatoes Cost Data

CADG Development Group

		Planted Area (Sq Metres)	Drip (Sq. Metres)	Trellis (Sq. Metres)	Under Plastic (Sq. metres)	None (Sq.Metres)		Plow/Leveling/Ridges Costs (USD) per Hectare	DAP Fertilizer (USD) Costs per Hectare	Fertilizer (UREA) Cost per Hectare	Seed Pricing (USD) per Hectare	Irrigation Costs (USD) per Hectare	Pesticides Cost (USD) per Hectare	Weeding Costs (USD) per Hectare	Transportation Costs (USD) per Hectare	Thresher Costs (USD) per Hectare	Sowing/Havesting Costs (USD) per Hectare	Farmer Share (USD) per Hectare	Mulla Share (USD) per Hectare	Other Cost (USD) per Hectare	Total Cost per Hectare	Income (USD per Hectare)	Price (USD per Kg)	NET Income (USD) per Hectare	Yield (Kg per Hectare)	Increase/Decrease in Yield per Hectare
Selected Demonstration Plots	**Sq Metres**	12,167	167	-	-	12,000																				
	Hectares	1.22	0.02	-	-	1.20	**Avg / Ha**	**$90.00**	**$128.00**	**$60.00**	**$15.00**			**$170.00**				**$338.20**	**$150.30**		**$1,275**	**$1,542**	**$0.12**	**$86**	**11,643 kg**	**2,698 kg**
	Jeribs	6	0	-	-	6	**Avg / Jerib**	**$18.00**	**$25.60**	**$12.00**	**$3.00**			**$34.00**				**$67.64**	**$30.06**		**$255**	**$308**		**$17.20**	**2,329 kg**	**540 kg**
							Maximum	**$470**	**$140**	**$450**	**$400.00**	**$40**	**$60**	**$800**	**$240**			**$2,309**	**$691**	**$90**	**$3,647**	**$6,928**	**$0.32**	**$3,281**	**21,650 kg**	**12,620 kg**
							75% of Max	**$280**	**$134**	**$255**	**$207.50**	**$20**	**$30**	**$485**	**$120**			**$1,324**	**$421**	**$45**	**$2,461**	**$4,235**	**$0.22**	**$1,684**	**16,646 kg**	**7,659 kg**
	No of Plots	9	1	-	-	8	**Nr Plots**	**9**	**9**	**9**	**9**	**8**	**7**	**8**	**8**	**7**	**7**	**9**	**9**	**8**	**9**	**8**	**8**	**9**	**8**	**8**
Total Demonstration Plots	**Sq Metres**	1,519,900	1,428,800	193,800	-	81,100																				
	Hectares	151.99	142.88	19.38	-	8.11																				
	Jeribs	760	714	97	-	41																				
	No of Plots	261	188	24	-	72																				

Ref Number (1per plot, same for intercrop)	Crop	Variety	District	Sowing Date	Drip (Sq. Metres)	Trellis (Sq. Metres)	Under Plastic (Sq. metres)	None (Sq.Metres)	Harvest date	Plow/Leveling/Ridges Costs (USD) per Hectare	DAP Fertilizer (USD) Costs per Hectare	Fertilizer (UREA) Cost per Hectare	Seed Pricing (USD) per Hectare	Irrigation Costs (USD) per Hectare	Pesticides Cost (USD) per Hectare	Weeding Costs (USD) per Hectare	Transportation Costs (USD) per Hectare	Thresher Costs (USD) per Hectare	Sowing/Havesting Costs (USD) per Hectare	Farmer Share (USD) per Hectare	Mulla Share (USD) per Hectare	Other Cost (USD) per Hectare	Total Cost per Hectare	Income (USD per Hectare)	Selling Price (USD per Kg)	NET Income (USD) per Hectare	Yield (Kg per Hectare)	Increase/Decrease in Yield per Hectare
A 60	Tomato	Reogrand	Khakriz	10-Apr-04	167																						
A 122	Tomato	Caula	Garmsir	7-Apr-05				1,000	29-Jun-05	70.00	57.40	139.00	100.00	40.00			240.00			2,309.30	691.20	90.00	3,647	6,928	$0.32	$3,281	21,650	-350
A 41	Tomato	Pearson	Daman	21-Apr-05				500	20-Sep-05	95.80		450.00	80.00			400.00				654.00	196.20		1,876	1,962	$0.10	$86	19,620	12,620
A 14	Tomato	Roma	Arghandab	15-Apr-05				2,000	9-Sep-05	133.30	137.50	60.00			60.00	240.00				429.30	214.65		1,275	2,147	$0.12	$872	17,890	7,890
A 8	Tomato	Pearson	Panjwai	20-Apr-05				2,000	25-Oct-05	470.00	129.10	35.90				180.00				338.20	150.30		1,304	1,384	$0.10	$80	13,835	1,335
A 83	Tomato	Yakta 205	Musaqlla	13-Apr-05				2,000	30-Jul-05	80.00	128.00	56.00	15.00			160.00				510.30	170.10		1,119	1,701	$0.18	$582	9,450	9,450
A 42	Tomato	Pearson	Daman	19-Apr-05				500	18-Sep-05	110.80		83.20	140.00		40.00	800.00				211.20	63.36		1,449	634	$0.08	-$815	7,920	2,420
A 36	Tomato	Pearson	Maiwand	12-Apr-05				2,000	20-Sep-05	90.00	140.00	50.00	400.00			60.00				147.20	38.70		926	767	$0.11	-$159	6,975	2,975
A 13	Tomato	Roma	Arghandab	25-Mar-05				2,000	8-Sep-05	90.00	135.00	62.50			12.00					133.30	66.69		499	667	$0.12	$168	5,560	560

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j. Watermelon Report:

Introduction:

Watermelon farmers can produce large yields, however the average selling price is only $0.08 per kg, making it one of the cheapest crops to buy. Watermelon is eaten raw it contains a high amount of vitamin A and C. As a summer crop it makes for a great treat when cooled and is very popular in Afghanistan as it rehydrates the consumer. The seeds themselves are rich in protein and can be eaten as a snack. Watermelon is a summer crop and requires temperatures of 29 to 35 degrees to produce the highest quantity of yield. The optimal time that Watermelon is sowed is in April and the usual harvest time for watermelon is in late June to early July.

Plot Description:

6 different watermelon demonstration plots have been established under the ALQIP program. Plots A 10, A 89, A 237, and A 88 all have drip irrigation systems installed in them. Plots A 34 and A 123 are left without drip irrigation systems. Watermelon plots were tested in CADG research farms to determine how successful watermelon would be in Afghanistan, and which varieties of watermelon seeds would be most successful. In 2005 four different varieties of watermelon have been tested. When tested in Bolan farm the average yield that all four varieties have produced is 11,040 kg per hectare. The yields of this test are low due to an unknown virus infecting many of the watermelon plants and the watermelon plants not being sprayed to keep away insects.

Impact:

Yield and NET Income:

There have been many success stories for watermelon. On average the watermelon plots have produced yields that are 39% above the traditional yield. The selling prices for watermelon vary from as low as $0.04 per kg to as high as $0.14 per kg. The farmer of A 123, which produced the highest yield produced a yield that is 93% higher than the traditional yield. With the exception of plot A 89 farmers are able to sell at $0.11 per kg while the farmers that did not use drip irrigation were only to get $0.08 per kg (fruit size could have played a role here although this is unconfirmed). Even though plot A89 had a high yield the farmer has sold his fruit at a very low price resulting in a NETT income that is below the traditional NETT income. This farmer has sold his crop for only $0.04 per kg while other farmers in Helmand are getting twice this amount. On the other hand the farmer growing plot

A 10 produced the 3rd highest yield, but made the highest NETT income. Plot A 123 produced the second highest net Income.

All watermelon yields remained high and have produced positive NETT income. For many farmers this has been a successful year as farmers have achieved NETT incomes as high as $2,400 per hectare. It is essential that farmers stay competitive with the market prices, even when gaining especially high yields, and not sell their crops for such low prices as farmer of plot A 89.
Cost and Income:

As expected farmers that are not using drip irrigation are tending to spend more on DAP fertilizer and weeding. The farmer for plot A 237 has spent a high amount on maintenance and running of the drip irrigation system. This may have lead to the farmer over irrigating his field, and as a result producing one of the lowest yields when compared to the other plots.

With the exception of A 89 selling prices have remained consistent, and farmers are producing incomes as high as $4,200. This has made watermelon one of the more profitable crops for Afghan farmers to grow.

Conclusion:

For watermelon crops farmers can have successful plots without the aid of a drip irrigation system, but as shown in A 10 the drip irrigation system does more than pay for itself when used properly. Farmers need to be careful about flooding the market with watermelon. This has been a major cause for the low selling price of watermelon. As with Tomato, Watermelon also has a very steep U shaped price curve and farmers that could produce either early or late watermelons would do much better in the market place.

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ALQIP Watermelon Yield Data

CADG Development Group

		Planted Area (Sq Metres)	Drip (Sq. Metres)	Trellis (Sq. Metres)	Under Plastic (Sq. metres)	None (Sq.Metres)
Selected Demonstration Plots	**Sq Metres**	**37,000**	**34,000**	**-**	**-**	**3,000**
	Hectares	**3.70**	**3.40**	**-**	**-**	**0.30**
	Jeribs	**19**	**17**	**-**	**-**	**2**
	No of Plots	**7**	**5**	**-**	**-**	**2**
Total Demonstration Plots	**Sq Metres**	**1,519,900**	**1,428,800**	**193,800**	**-**	**81,100**
	Hectares	**151.99**	**142.88**	**19.38**	**-**	**8.11**
	Jeribs	**760**	**714**	**97**	**-**	**41**
	No of Plots	**261**	**188**	**24**	**-**	**72**

	Total Cost per Hectare	Income (USD per Hectare)	Price (USD per Kg)	**NET Income (USD) per Hectare**	Traditional Yield (Kg per Hectare)	Yield (Kg per Hectare)	Increase/Decrease in Yield per Hectare	Percentage Increase/Decrease in Yield per Hectare
Avg / Ha	**$1,151**	**$2,205**	**$0.08**	**$1,009**	**23,727 kg**	**31,000 kg**	**9,500 kg**	**44%**
Avg / Jerib	**$230**	**$441**	**$0.00**	**$202**	**4,745 kg**	**6,200 kg**	**1,900 kg**	**0%**
Maximum	**$1,802**	**$4,200**	**$0.12**	**$2,479**	**25,000 kg**	**43,800 kg**	**20,937 kg**	**92%**
75% of Max	**$1,476**	**$3,203**	**$0.10**	**$1,744**	**24,364 kg**	**37,400 kg**	**15,219 kg**	**68%**
Nr Plots	**7**	**6**	**6**	**7**	**7**	**6**	**6**	**6**

Intercrop (Yes/No)	Year	Season (Winter, Summer or Perennial)	Office	Province	Ref Number (1per plot, same for intercrop)	Crop	Variety	District	Sowing Date	Drip (Sq. Metres)	Trellis (Sq. Metres)	Under Plastic (Sq. metres)	None (Sq.Metres)	Harvest date	Yield (Total Kg) per Plot	Price per Kg (Afs)	Total Cost per Hectare	Income (USD per Hectare)	Selling Price (USD per Kg)	NET Income (USD) per Hectare	Traditional Yield (Kg per Hectare)	Yield (Kg per Hectare)	Increase/Decrease in Yield per Hectare	Percentage Increase/Decrease in Yield per Hectare	Ruling Exchange Rate (Afs per USD)
	2005	summ	K	KH	A 242	Watermelon	Charleston grey	Panjwai	24-Jun-05	4,000					0		$70			-$70	23,727				50
	2005	Summ	H	SH	A 123	Watermelon	Charleston Gray	Garmsir	11-Apr-05				1,000	28-Jun-05	4,380	4.0	$1,802	$3,534	$0.08	$1,732	22,863	43,800	20,937	92%	50
	2005	Summ	H	NH	A 89	Watermelon	Charleston Gray	Sangin	23-May-05	10,000				11-Jul-05	35,250	2.0	$711	$1,410	$0.04	$699	23,727	35,250	11,523	49%	50
	2005	Summ	K	KH	A 10	Watermelon	Charleston gray	Dand	29-May-05	6,000				18-Sep-05	21,000	6.0	$1,722	$4,200	$0.12	$2,479	25,000	35,000	10,000	40%	50
	2005	Summ	K	KH	A 34	Watermelon	Charleston gray	Maiwand	27-Apr-05				2,000	17-Aug-05	5,400	4.0	$1,151	$2,160	$0.08	$1,009	18,000	27,000	9,000	50%	50
	2005	summ	K	KH	A 237	Watermelon	Charleston grey	Zhari	16-Jun-05	4,000				15-Sep-05	9,000	5.0	$1,221	$2,250	$0.10	$1,029	18,750	22,500	3,750	20%	50
	2005	Summ	H	NH	A 88	Watermelon	Charleston Gray	Musaqlla	22-May-05	10,000				25-Jul-05	20,500	4.4	$983	$1,804	$0.09	$821	23,727	20,500	-3,227	-14%	50

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ALQIP Watermelon Cost Data

CADG Development Group

		Planted Area (Sq Metres)	Drip (Sq. Metres)	Trellis (Sq. Metres)	Under Plastic (Sq. metres)	None (Sq.Metres)		Plow/Leveling/Ridges Costs (USD) per Hectare	DAP Fertilizer (USD) Costs per Hectare	Fertilizer (UREA) Cost per Hectare	Seed Pricing (USD) per Hectare	Irrigation Costs (USD) per Hectare	Pesticides Cost (USD) per Hectare	Weeding Costs (USD) per Hectare	Transportation Costs (USD) per Hectare	Thresher Costs (USD) per Hectare	Sowing/Havesting Costs (USD) per Hectare	Farmer Share (USD) per Hectare	Mulla Share (USD) per Hectare	Other Cost (USD) per Hectare	Total Cost per Hectare	Income (USD per Hectare)	Price (USD per Kg)	NET Income (USD) per Hectare	Yield (Kg per Hectare)	Increase/Decrease in Yield per Hectare	Percentage Increase/Decrease in Yield per Hectare
Selected Demonstration Plots	**Sq Metres**	37,000	34,000	-	-	3,000																					
	Hectares	3.70	3.40	-	-	0.30	**Avg / Ha**	**$80.00**	**$110.00**	**$70.00**	**$20.00**	**$202.70**						**$456.52**	**$210.00**		**$1,151**	**$2,205**	**$0.08**	**$1,009**	**31,000 kg**	**9,500 kg**	**44%**
	Jeribs	19	17	-	-	2	**Avg / Jerib**	**$16.00**	**$22.00**	**$14.00**	**$4.00**	**$40.54**						**$91.30**	**$42.00**		**$230**	**$441**		**$201.80**	**6,200 kg**	**1,900 kg**	
							Maximum	**$105**	**$140**	**$159**	**$400.00**	**$622**	**$6**	**$60**				**$1,060**	**$353**	**$80**	**$1,802**	**$4,200**	**$0.12**	**$2,479**	**43,800 kg**	**20,937 kg**	**92%**
							75% of Max	**$93**	**$125**	**$114**	**$210.00**	**$412**	**$3**	**$30**				**$758**	**$282**	**$40**	**$1,476**	**$3,203**	**$0.10**	**$1,744**	**37,400 kg**	**15,219 kg**	**68%**
	No of Plots	7	5	-	-	2	**Nr Plots**	**7**	**5**	**7**	**6**	**6**	**5**	**4**	**4**	**4**	**4**	**7**	**7**	**5**	**7**	**6**	**6**	**7**	**6**	**6**	**6**
Total Demonstration Plots	**Sq Metres**	1,519,900	1,428,800	193,800	-	81,100																					
	Hectares	151.99	142.88	19.38	-	8.11																					
	Jeribs	760	714	97	-	41																					
	No of Plots	261	188	24	-	72																					

Ref Number (1per plot, same for intercrop)	Crop	Variety	District	Sowing Date	Drip (Sq. Metres)	Trellis (Sq. Metres)	Under Plastic (Sq. metres)	None (Sq.Metres)	Harvest date	Plow/Leveling/Ridges Costs (USD) per Hectare	DAP Fertilizer (USD) Costs per Hectare	Fertilizer (UREA) Cost per Hectare	Seed Pricing (USD) per Hectare	Irrigation Costs (USD) per Hectare	Pesticides Cost (USD) per Hectare	Weeding Costs (USD) per Hectare	Transportation Costs (USD) per Hectare	Thresher Costs (USD) per Hectare	Sowing/Havesting Costs (USD) per Hectare	Farmer Share (USD) per Hectare	Mulla Share (USD) per Hectare	Other Cost (USD) per Hectare	Total Cost per Hectare	Income (USD per Hectare)	Selling Price (USD per Kg)	NET Income (USD) per Hectare	Yield (Kg per Hectare)	Increase/Decrease in Yield per Hectare	Percentage Increase/Decrease in Yield per Hectare
A 242	Watermelon	Charleston grey	Panjwai	24-Jun-05	4,000							70.00										70			-$70			
A 123	Watermelon	Charleston Gray	Garmsir	11-Apr-05				1,000	28-Jun-05	70.00	115.00	139.00	64.00							1,060.20	353.40	80.00	1,802	3,534	$0.08	$1,732	43,800	20,937	92%
A 89	Watermelon	Charleston Gray	Sangin	23-May-05	10,000				11-Jul-05	80.00		53.76	40.00	125.40	6.00					334.86	70.50		711	1,410	$0.04	$699	35,250	11,523	49%
A 10	Watermelon	Charleston gray	Dand	29-May-05	6,000				18-Sep-05			50.00	400.00	361.50						700.00	210.00		1,722	4,200	$0.12	$2,479	35,000	10,000	40%
A 34	Watermelon	Charleston gray	Maiwand	27-Apr-05				2,000	17-Aug-05	90.00	140.00	77.00				60.00				560.00	224.00		1,151	2,160	$0.08	$1,009	27,000	9,000	50%
A 237	Watermelon	Charleston grey	Zhari	16-Jun-05	4,000				15-Sep-05	105.00	110.00	158.60		622.00							225.00		1,221	2,250	$0.10	$1,029	22,500	3,750	20%
A 88	Watermelon	Charleston Gray	Musaqlla	22-May-05	10,000				25-Jul-05	80.00		70.00		280.00						456.52	96.10		983	1,804	$0.09	821	20,500	-3,227	-14%

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k. Cowpea, Melon and Red Onion

Introduction:

Cowpeas, melons, and onions are summer time crops and require heat that ranges between 23.9 and 29.4 C. The optimal sowing date for Cowpeas is in mid may to mid August. Melon requires temperatures similar to watermelon and need temperatures between 26.7 C and 32.2 C. The optimal planting time is mid April and the normal time to harvest melon is between June and July. Onion crops are more sensitive to heat when they are first planted, but become heat resistant as they reach full maturity. Due to the sensitivity of the seeds, Onion first need to be sown in a micro seedling nursery in February, then transplanted in April and finally harvested in July.

Plot Description:

For Local Cowpea, Arkane Melon, and Red Stone Onion Variety only one plot is planted. Both Cowpeas and Melon are under drip irrigation, but the Onion plot is not. Cowpeas have been tested in 2003 to see how they would perform in the summer time. Seven different varieties of Cowpeas have been tested in Bolan farm including local variety cowpea seeds. The local Variety cowpea seeds produced a yield of 757 kg per hectare. In 2003 6 different varieties of onions have been tested include the red stone onion variety. Through the use of best practices, and the aid of a drip irrigation system Bolan farm is able to produce a yield of 91,392 kg per hectare.

Impact:

Yield and Income:

Out of the three crops the Cowpeas have produced the lowest yield and income, although the yield is higher than the traditional yield. The local Cowpea variety does not produce a high yield, however farmers are able to get more than $0.60 per kg. This plot has produced a yield higher than the traditional yield but a lower yield than what was achieved at Bolan farm. The Income of Cowpea for this plot is only $345 per hectare, which has resulted in a NET income of -$338 per hectare.

Arkane Melon produced a yield of 27,000 kg per hectare that is 42% higher then the traditional yield per hectare. The selling price is low compared to many of the other crops at $0.14 per kg, but due to the high yields this farmer is able to make an income of $3,780 per hectare. If compared with the income farmers are making without using best practice, assuming they are able to get the same price for the yield the farmer using best practices is making $1,120 more per hectare. The largest costs for this plot are the farmer shares and the fertilizer. The costs that the farmer has spend for this crop is low and as a result as made a high net Income of $2,118 per hectare.

The Farmer Growing the Red Stone Onion variety is making a yield that is 88% higher than the traditional yield. Farmers can produce an even higher yield than

the 91,392 kg per hectare achieved here, if best practices are used. This is about 5 times higher than the traditional yield. The income that this farmer is making is $1,575 higher than the traditional yield assuming that farmers are getting the same prices for their yields as the farmer in plot A 33 is getting for his yield using best practices. Plot A 33 is able to produce a yield of 33,750 kg per hectare, which is lower than the exceptional yield, but with the selling price of $0.10 per kg, this farmer is making an income of $3,375 per hectare, and a NETT income of $1,871 per hectare.

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ALQIP Onions Yield Data

CADG Development Group

		Planted Area (Sq Metres)	Drip (Sq. Metres)	Trellis (Sq. Metres)	Under Plastic (Sq. metres)	None (Sq.Metres)
Selected Demonstration Plots	**Sq Metres**	**7,000**	**5,000**	**-**	**-**	**2,000**
	Hectares	**0.70**	**0.50**	**-**	**-**	**0.20**
	Jeribs	**4**	**3**	**-**	**-**	**1**
	No of Plots	**2**	**1**	**-**	**-**	**1**
Total Demonstration Plots	**Sq Metres**	**1,519,900**	**1,428,800**	**193,800**	**-**	**81,100**
	Hectares	**151.99**	**142.88**	**19.38**	**-**	**8.11**
	Jeribs	**760**	**714**	**97**	**-**	**41**
	No of Plots	**261**	**188**	**24**	**-**	**72**

	Total Cost per Hectare	Income (USD per Hectare)	Price (USD per Kg)	**NET Income (USD) per Hectare**	Traditional Yield (Kg per Hectare)	Yield (Kg per Hectare)	Increase/Decrease in Yield per Hectare	Percentage Increase/Decrease in Yield per Hectare
Avg / Ha	**$752**	**$3,375**	**$0.10**	**$936**	**18,000 kg**	**33,750 kg**	**15,750 kg**	**88%**
Avg / Jerib	**$150**	**$675**	**$0.00**	**$187**	**3,600 kg**	**6,750 kg**	**3,150 kg**	**0%**
Maximum	**$1,504**	**$3,375**	**$0.10**	**$1,871**	**18,000 kg**	**33,750 kg**	**15,750 kg**	**88%**
75% of Max	**$1,128**	**$3,375**	**$0.10**	**$1,403**	**18,000 kg**	**33,750 kg**	**15,750 kg**	**88%**
Nr Plots	**2**	**1**	**1**	**2**	**1**	**1**	**1**	**1**

Ref Number (1per plot, same for intercrop)	Crop	Variety	District	Sowing Date	Drip (Sq. Metres)	Trellis (Sq. Metres)	Under Plastic (Sq. metres)	None (Sq.Metres)	Harvest date	Yield (Total Kg) per Plot	Price per Kg (Afs)	Total Cost per Hectare	Income (USD per Hectare)	Selling Price (USD per Kg)	NET Income (USD) per Hectare	Traditional Yield (Kg per Hectare)	Yield (Kg per Hectare)	Increase/Decrease in Yield per Hectare	Percentage Increase/Decrease in Yield per Hectare
A 27	Onion	Texas grano	Zhari	18-Jan-05	5,000					0		$0			$0				
A 33	Onion	Red	Maiwand	5-Apr-05				2,000	1-Nov-05	6,750	5.0	$1,504	$3,375	$0.10	$1,871	18,000	33,750	15,750	88%

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ALQIP Onion Cost Data

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		Planted Area (Sq Metres)	Drip (Sq. Metres)	Trellis (Sq. Metres)	Under Plastic (Sq. metres)	None (Sq.Metres)		Plow/Leveling/Ridges Costs (USD) per Hectare	DAP Fertilizer (USD) Costs per Hectare	Fertilizer (UREA) Cost per Hectare	Seed Pricing (USD) per Hectare	Irrigation Costs (USD) per Hectare	Pesticides Cost (USD) per Hectare	Weeding Costs (USD) per Hectare	Transportation Costs (USD) per Hectare	Thresher Costs (USD) per Hectare	Sowing/Havesting Costs (USD) per Hectare	Farmer Share (USD) per Hectare	Mulla Share (USD) per Hectare	Other Cost (USD) per Hectare	Total Cost per Hectare	Income (USD per Hectare)	Price (USD per Kg)	NET Income (USD) per Hectare	Yield (Kg per Hectare)	Increase/Decrease in Yield per Hectare	Percentage Increase/Decrease in Yield per Hectare
Selected Demonstration Plots	**Sq Metres**	7,000	5,000	-	-	2,000																					
	Hectares	0.70	0.50	-	-	0.20	**Avg / Ha**	**$45.00**	**$70.00**	**$38.50**	**$19.00**			**$40.00**				**$445.60**	**$93.75**		**$752**	**$3,375**	**$0.10**	**$935.65**	**33,750 kg**	**#######**	**88%**
	Jeribs	4	3	-	-	1	**Avg / Jerib**	**$9.00**	**$14.00**	**$7.70**	**$3.80**			**$8.00**				**$89.12**	**$18.75**		**$150**	**$675**		**$187.13**	**6,750 kg**	**3,150 kg**	
							Maximum	**$90**	**$140**	**$77**	**$38.00**			**$80**				**$891**	**$188**		**$1,504**	**$3,375**	**$0.10**	**$1,871**	**33,750 kg**	**#######**	**88%**
							75% of Max	**$68**	**$105**	**$58**	**$28.50**			**$60**				**$668**	**$141**		**$1,128**	**$3,375**	**$0.10**	**$1,403**	**33,750 kg**	**#######**	**88%**
	No of Plots	2	1	-	-	1	**Nr Plots**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**1**	**1**	**2**	**1**	**1**	**1**
Total Demonstration Plots	**Sq Metres**	1,519,900	1,428,800	193,800	-	81,100																					
	Hectares	151.99	142.88	19.38	-	8.11																					
	Jeribs	760	714	97	-	41																					
	No of Plots	261	188	24	-	72																					

Ref Number (1per plot, same for intercrop)	Crop	Variety	District	Sowing Date	Drip (Sq. Metres)	Trellis (Sq. Metres)	Under Plastic (Sq. metres)	None (Sq.Metres)	Harvest date	Plow/Leveling/Ridges Costs (USD) per Hectare	DAP Fertilizer (USD) Costs per Hectare	Fertilizer (UREA) Cost per Hectare	Seed Pricing (USD) per Hectare	Irrigation Costs (USD) per Hectare	Pesticides Cost (USD) per Hectare	Weeding Costs (USD) per Hectare	Transportation Costs (USD) per Hectare	Thresher Costs (USD) per Hectare	Sowing/Havesting Costs (USD) per Hectare	Farmer Share (USD) per Hectare	Mulla Share (USD) per Hectare	Other Cost (USD) per Hectare	Total Cost per Hectare	Income (USD per Hectare)	Selling Price (USD per Kg)	NET Income (USD) per Hectare	Yield (Kg per Hectare)	Increase/Decrease in Yield per Hectare	Percentage Increase/Decrease in Yield per Hectare
A 27	Onion	Texas grano	Zhari	18-Jan-05	5,000																							
A 33	Onion	Red	Maiwand	5-Apr-05				2,000	1-Nov-05	90.00	140.00	77.00	38.00			80.00				891.20	187.50		1,504	3,375	$0.10	1,871	33,750	15,750	88%

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ALQIP Melon Yield Data

CADG Development Group

		Planted Area (Sq Metres)	Drip (Sq. Metres)	Trellis (Sq. Metres)	Under Plastic (Sq. metres)	None (Sq.Metres)
Selected Demonstration Plots	**Sq Metres**	**2,000**	**2,000**	**-**	**-**	**-**
	Hectares	**0.20**	**0.20**	**-**	**-**	**-**
	Jeribs	**1**	**1**	**-**	**-**	**-**
	No of Plots	**1**	**1**	**-**	**-**	**-**
Total Demonstration Plots	**Sq Metres**	**1,519,900**	**1,428,800**	**193,800**	**-**	**81,100**
	Hectares	**151.99**	**142.88**	**19.38**	**-**	**8.11**
	Jeribs	**760**	**714**	**97**	**-**	**41**
	No of Plots	**261**	**188**	**24**	**-**	**72**

	Total Cost per Hectare	Income (USD per Hectare)	Price (USD per Kg)	**NET Income (USD) per Hectare**	Traditional Yield (Kg per Hectare)	Yield (Kg per Hectare)	Increase/Decrease in Yield per Hectare	Percentage Increase/Decrease in Yield per Hectare
Avg / Ha	**$603**	**$3,780**	**$0.14**	**$3,177**	**19,000 kg**	**27,000 kg**	**8,000 kg**	**42%**
Avg / Jerib	**$121**	**$756**	**$0.00**	**$635**	**3,800 kg**	**5,400 kg**	**1,600 kg**	**0%**
Maximum	**$603**	**$3,780**	**$0.14**	**$3,177**	**19,000 kg**	**27,000 kg**	**8,000 kg**	**42%**
75% of Max	**$603**	**$3,780**	**$0.14**	**$3,177**	**19,000 kg**	**27,000 kg**	**8,000 kg**	**42%**
Nr Plots	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**

Ref Number (1per plot, same for intercrop)	Crop	Variety	District	Sowing Date	Drip (Sq. Metres)	Trellis (Sq. Metres)	Under Plastic (Sq. metres)	None (Sq.Metres)	Harvest date	Yield (Total Kg) per Plot	Price per Kg (Afs)	Total Cost per Hectare	Income (USD per Hectare)	Selling Price (USD per Kg)	NET Income (USD) per Hectare	Traditional Yield (Kg per Hectare)	Yield (Kg per Hectare)	Increase/Decrease in Yield per Hectare	Percentage Increase/Decrease in Yield per Hectare
A 253	Melon	rkane Type 1 and	Zhari	15-Jan-05	2,000				14-Sep-05	5,400	7.0	$603	$3,780	$0.14	$3,177	19,000	27,000	8,000	42%

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ALQIP Melon Cost Data

CADG Development Group

		Planted Area (Sq Metres)	Drip (Sq. Metres)	Trellis (Sq. Metres)	Under Plastic (Sq. metres)	None (Sq.Metres)		Plow/Leveling/Ridges Costs (USD) per Hectare	DAP Fertilizer (USD) Costs per Hectare	Fertilizer (UREA) Cost per Hectare	Seed Pricing (USD) per Hectare	Irrigation Costs (USD) per Hectare	Pesticides Cost (USD) per Hectare	Weeding Costs (USD) per Hectare	Transportation Costs (USD) per Hectare	Thresher Costs (USD) per Hectare	Sowing/Havesting Costs (USD) per Hectare	Farmer Share (USD) per Hectare	Mulla Share (USD) per Hectare	Other Cost (USD) per Hectare	Total Cost per Hectare	Income (USD per Hectare)	Price (USD per Kg)	NET Income (USD) per Hectare	Yield (Kg per Hectare)	Increase/Decrease in Yield per Hectare	Percentage Increase/Decrease in Yield per Hectare
Selected Demonstration Plots	**Sq Metres**	2,000	2,000	-	-	-																					
	Hectares	0.20	0.20	-	-	-	**Avg / Ha**	**$105.00**	**$120.00**									########	**$378.00**		**$603**	**$3,780**	**$0.14**	########	27,000 kg	8,000 kg	42%
	Jeribs	1	1	-	-	-	**Avg / Jerib**	**$21.00**	**$24.00**									**$211.80**	**$75.60**		**$121**	**$756**		**$423.60**	5,400 kg	1,600 kg	
							Maximum	**$105**	**$120**									**$1,059**	**$378**		**$603**	**$3,780**	**$0.14**	**$2,118**	27,000 kg	8,000 kg	42%
							75% of Max	**$105**	**$120**									**$1,059**	**$378**		**$603**	**$3,780**	**$0.14**	**$2,118**	27,000 kg	8,000 kg	42%
	No of Plots	1	1	-	-	-	**Nr Plots**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**
Total Demonstration Plots	**Sq Metres**	1,519,900	1,428,800	193,800	-	81,100																					
	Hectares	151.99	142.88	19.38	-	8.11																					
	Jeribs	760	714	97	-	41																					
	No of Plots	261	188	24	-	72																					

Ref Number (1per plot, same for intercrop)	Crop	Variety	District	Sowing Date	Drip (Sq. Metres)	Trellis (Sq. Metres)	Under Plastic (Sq. metres)	None (Sq.Metres)	Harvest date	Plow/Leveling/Ridges Costs (USD) per Hectare	DAP Fertilizer (USD) Costs per Hectare	Fertilizer (UREA) Cost per Hectare	Seed Pricing (USD) per Hectare	Irrigation Costs (USD) per Hectare	Pesticides Cost (USD) per Hectare	Weeding Costs (USD) per Hectare	Transportation Costs (USD) per Hectare	Thresher Costs (USD) per Hectare	Sowing/Havesting Costs (USD) per Hectare	Farmer Share (USD) per Hectare	Mulla Share (USD) per Hectare	Other Cost (USD) per Hectare	Total Cost per Hectare	Income (USD per Hectare)	Selling Price (USD per Kg)	NET Income (USD) per Hectare	Yield (Kg per Hectare)	Increase/Decrease in Yield per Hectare	Percentage Increase/Decrease in Yield per Hectare
A 253	Melon	Ikane Type 1 and	Zhari	15-Jan-05	2,000				14-Sep-05	105.00	120.00									1,059.00	378.00		603	3,780	$0.14	$2,118	27,000	8,000	42%

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ALQIP Cowpea Yield Data

CADG Development Group

		Planted Area (Sq Metres)	Drip (Sq. Metres)	Trellis (Sq. Metres)	Under Plastic (Sq. metres)	None (Sq.Metres)
Selected Demonstration Plots	**Sq Metres**	**6,000**	**6,000**	**-**	**-**	**-**
	Hectares	**0.60**	**0.60**	**-**	**-**	**-**
	Jeribs	**3**	**3**	**-**	**-**	**-**
	No of Plots	**1**	**1**	**-**	**-**	**-**
Total Demonstration Plots	**Sq Metres**	**1,519,900**	**1,428,800**	**193,800**	**-**	**81,100**
	Hectares	**151.99**	**142.88**	**19.38**	**-**	**8.11**
	Jeribs	**760**	**714**	**97**	**-**	**41**
	No of Plots	**261**	**188**	**24**	**-**	**72**

	Total Cost per Hectare	Income (USD per Hectare)	Price (USD per Kg)	NET Income (USD) per Hectare	Traditional Yield (Kg per Hectare)	Yield (Kg per Hectare)	Increase/Decrease in Yield per Hectare	Percentage Increase/Decrease in Yield per Hectare
Avg / Ha	**$683**	**$345**	**$0.60**	**-$338**	**167 kg**	**575 kg**	**408 kg**	**244%**
Avg / Jerib	**$137**	**$69**	**$0.00**	**-$68**	**33 kg**	**115 kg**	**82 kg**	**0%**
Maximum	**$683**	**$345**	**$0.60**	**-$338**	**167 kg**	**575 kg**	**408 kg**	**244%**
75% of Max	**$683**	**$345**	**$0.60**	**-$338**	**167 kg**	**575 kg**	**408 kg**	**244%**
Nr Plots	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**

Ref Number (1per plot, same for intercrop)	Crop	Variety	District	Sowing Date	Drip (Sq. Metres)	Trellis (Sq. Metres)	Under Plastic (Sq. metres)	None (Sq.Metres)	Harvest date	Yield (Total Kg) per Plot	Price per Kg (Afs)	Total Cost per Hectare	Income (USD per Hectare)	Selling Price (USD per Kg)	NET Income (USD) per Hectare	Traditional Yield (Kg per Hectare)	Yield (Kg per Hectare)	Increase/Decrease in Yield per Hectare	Percentage Increase/Decrease in Yield per Hectare
A 241	Cowpea	Local	Panjwai	26-Jun-05	6,000				24-Oct-05	345	30.0	$683	$345	$0.60	-$338	167	575	408	244%

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ALQIP Cowpeas Cost Data

CADG Development Group

		Planted Area (Sq Metres)	Drip (Sq. Metres)	Trellis (Sq. Metres)	Under Plastic (Sq. metres)	None (Sq.Metres)		Plow/Leveling/Ridges Costs (USD) per Hectare	DAP Fertilizer (USD) Costs per Hectare	Fertilizer (UREA) Cost per Hectare	Seed Pricing (USD) per Hectare	Irrigation Costs (USD) per Hectare	Pesticides Cost (USD) per Hectare	Weeding Costs (USD) per Hectare	Transportation Costs (USD) per Hectare	Thresher Costs (USD) per Hectare	Sowing/Havesting Costs (USD) per Hectare	Farmer Share (USD) per Hectare	Mulla Share (USD) per Hectare	Other Cost (USD) per Hectare	Total Cost per Hectare	Income (USD per Hectare)	Price (USD per Kg)	NET Income (USD) per Hectare	Yield (Kg per Hectare)	Increase/Decrease in Yield per Hectare	Percentage Increase/Decrease in Yield per Hectare
Selected Demonstration Plots	**Sq Metres**	6,000	6,000	-	-	-																					
	Hectares	0.60	0.60	-	-	-	**Avg / Ha**	**$110.00**	**$120.00**			**$384.30**	**$30.00**					**$32.00**	**$6.70**		**$683**	**$345**	**$0.60**	**-$338.00**	**575 kg**	**408 kg**	**244%**
	Jeribs	3	3	-	-	-	**Avg / Jerib**	**$22.00**	**$24.00**			**$76.86**	**$6.00**					**$6.40**	**$1.34**		**$137**	**$69**		**-$67.60**	**115 kg**	**82 kg**	
							Maximum	**$110**	**$120**			**$384**	**$30**					**$32**	**$7**		**$683**	**$345**	**$0.60**	**-$338**	**575 kg**	**408 kg**	**244%**
							75% of Max	**$110**	**$120**			**$384**	**$30**					**$32**	**$7**		**$683**	**$345**	**$0.60**	**-$338**	**575 kg**	**408 kg**	**244%**
	No of Plots	1	1	-	-	-	**Nr Plots**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**
Total Demonstration Plots	**Sq Metres**	1,519,900	1,428,800	193,800	-	81,100																					
	Hectares	151.99	142.88	19.38	-	8.11																					
	Jeribs	760	714	97	-	41																					
	No of Plots	261	188	24	-	72																					

Ref Number (1per plot, same for intercrop)	Crop	Variety	District	Sowing Date	Drip (Sq. Metres)	Trellis (Sq. Metres)	Under Plastic (Sq. metres)	None (Sq.Metres)	Harvest date	Plow/Leveling/Ridges Costs (USD) per Hectare	DAP Fertilizer (USD) Costs per Hectare	Fertilizer (UREA) Cost per Hectare	Seed Pricing (USD) per Hectare	Irrigation Costs (USD) per Hectare	Pesticides Cost (USD) per Hectare	Weeding Costs (USD) per Hectare	Transportation Costs (USD) per Hectare	Thresher Costs (USD) per Hectare	Sowing/Havesting Costs (USD) per Hectare	Farmer Share (USD) per Hectare	Mulla Share (USD) per Hectare	Other Cost (USD) per Hectare	Total Cost per Hectare	Income (USD per Hectare)	Selling Price (USD per Kg)	NET Income (USD) per Hectare	Yield (Kg per Hectare)	Increase/Decrease in Yield per Hectare	Percentage Increase/Decrease in Yield per Hectare
A 241	Cowpea	Local	Panjwai	26-Jun-05	6,000				24-Oct-05	110.00	120.00			384.30	30.00					32.00	6.70		683	345	$0.60	-$338	575	408	244%

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4. Challenges Encountered and Remedial Action Taken:

a. Pests:

Pests have continued to be a problem all year. The various crops have been infested with Cut worm, Stem borer, Boll worm, Red Spider Mite, Sunn Pests, and Nematodes being identified as the main trouble causers. These have been dealt with as the situation merited. The Nematodes are very likely to become a problem in the future as the only real control of this problem is by using highly toxic chemicals. Bad practices such as not doing proper crop rotation will further increase the rate at which this pest becomes a serious problem causing untold economic damage to most crops.

Alarming numbers of Sunn pests have also been spotted in the wheat crops and year by year this seems to be found in more and more districts of Helmand. The numbers of Sunn Pests will remain high unless something is done to control the number insects in the Helmand region. CADG has implemented a Sunn Pest program under the Ramp program where we hope to identify the number of Sunn pests in each area and educate farmers on how to properly eradicate Sunn pest, mechanically and chemically.

b. Security:

Poor security remained to be a consistent problem throughout the year as travel become more and more limited. Extension workers although not directly threatened, feel threatened and are doing everything in their power not to draw unwanted attention to themselves. As a result general open field days were cancelled and extension workers would only make direct contact with known or recommended farmers in their districts. A factor that worked to our advantage was that most extension workers are working in the districts from which they hail, this makes it easier for them to avoid making contact with known Taliban / Anti government people.

c. Marketing:

In the current condition many Afghan farmers are still using old methods of farming and not properly following instructions in the usage of the new technologies that have been introduced to them. Farmers are using old varieties of crops that are unable to compete with the world market.

Packaging is also a problem as modern packaging materials, when available are very expensive. Crops packed in the traditional wooden packaging are often crammed in resulting in damaged and bruised produce. As a result many of the produce is being rejected or bought at very poor prices by outside countries.

CADG is constantly importing new varieties and testing them to find the best varieties. New packaging designs are being developed and measures have been taken to ensure that proper packaging practices are taking place. The prices for producing, preparing, and shipping the products costs are to high and profits

currently are slim. This associated with very high risks of failure Afghan farmers and traders are reluctant to adopt the new methods.

d. Desalination plots:

Due to unforeseen problems and poor security the target of 10 plots have not been achieved. The main reason for this is that it has been found that there no suitable sites on which to do these trials that are in secure areas.

What is required is a well drained field that has a good water supply. Unfortunately, most of the fields ruined by salination are poorly drained and have insufficient water to properly flood the field and rinse the salts from the soil. The other problem we have is that the water source is already contaminated with a high salt content, making it more difficult to actually flood the field and rinse it.

Many of the fields destroyed by salination are also in areas where security is not good (so called desert areas) and extension workers and international staff alike are not welcome there. As it would require frequent visits to the same plot to ensure the system was properly installed and operated it was decided not to push ahead with the project.

e. Hectares of drip:

We have a target of 200 hectares of drip irrigation to be installed, but have only reached 143 hectares. We have, however, installed 188 drip systems. These are designed to all be 1 hectare plots, but due to the nature of the fields in Helmand and Kandahar we often could not find a suitable 1 hectare plot and have had to settle for smaller plots. This has resulted in our only recording 143 hectares under Drip.

5. Photographs, Human Interest and Beneficiary Stories:

Lunch in Grishk - the local delicacy deep fried fish caught in the Helmand River and its canals.

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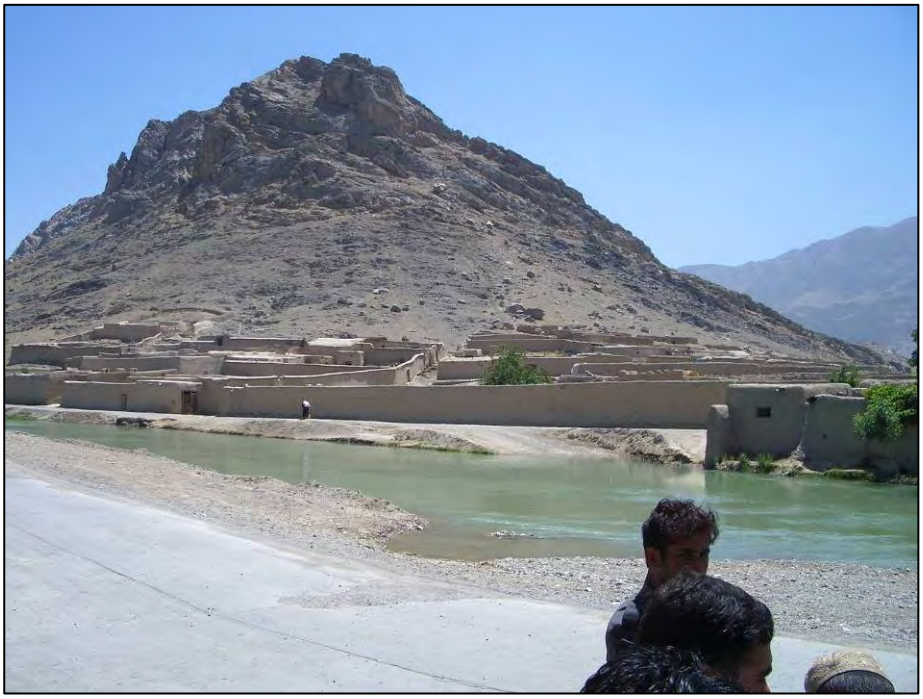
Young Herders - girls tending the family cows and goats.



The life blood of Afghanistan – Water – Arghandab Canal

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6. Performance Indicator Report:

Central Asia Development Group – AL-QIP
Agriculture Production and Markets
Final Submission Date: 2005
Reporting Period: January 2005 to September 2005

Location and description	
Province: Helmand/Kandahar District:	Project Description: *Agriculture Market*

Work Progress				
Activity / Performance Indicators	**Performance Targets**	**Accomplishments**		
		Previous Month	**Current Month**	**Cumulative To-date**
Agriculture Demos				
• # micro-nurseries established	30	0	0	39
• # hectares of drip irrigation installed	200	0	0	142.88
• # jeribs of orchards established	60	0	0	105
• # jeribs of vineyards established	60	0	0	102
• # hectares desalinized	10	0	0	0
• # demos in North Helmand	60	0	0	49

7. Conclusion

This program was a Quick Impact Program with the aim of increasing the rate at which aid was received on the ground level. CADG has successfully carried this program out reaching into most of the districts of Helmand, Kandahar and Zabul. This program has succeeded in bringing new technology to 188 farmers in a very short space of time. Besides the irrigation technology this project also benefited many farmers, supplying them with better quality seed and sound advice.

Although many Micro Nurseries have been established under this program the results will only be seen in another 2 years when they will be sold to farmers wanting to start new orchards.

It has been very pleasing to see that many of the farmers who received the drip systems are switching their drip systems to perennial crops – Vineyards and Orchards. It will be 3 more years before the fruits of this project really becomes clear.

From the CADG staff, we would like to say a big Thank you to USAID and Chemonics for all the support, guidance and of course funding, which gave us the opportunity to uplift the farmers in the south. It has been great working with the farmers and they have really appreciated the technology expertise this program brought to them.

Our thanks must also go to Netafim, who have really supported this program to the fullest extent possible.